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ABSTRACT

The project evaluated in this report is seen to be generalizable to other high schools. The program provides an unusual opportunity for high school students to have a variety of experiences in a wide range of health occupations. The evidence indicates that an allied health curriculum in the secondary schools can produce commendable educational results. The project is described and then evaluated in terms of student participation, interest, and progress, general quality and effectiveness of the program, and contributions of the project. Twenty-eight specific findings, eight conclusions, and six recommendations are set forth, all indicating enthusiastic positive evaluation of the project and its further applications as a model. Problems in dropout prevention, health manpower shortages, and lack of educational relevance can be met by such a project. Appendixes give an example of a training institute, an example of a task list, evaluation forms used by students and hospital supervisors, and a list of participating facilities and personnel. (MS)

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THE UCLA SECONDARY SCHOOLS PILOT AND DEMONSTRATION PROJECT

FOR

AN INTRODUCTION TO ALLIED HEALTH CAREERS

1970-1973

A SUMMARY EVALUATIVE REPORT

by

CLARENCE FIELSTRA

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UNIVERSITY OF CALIFORNIA, LOS ANGELES
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1970-1973

A SUMMARY EVALUATIVE REPORT

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FOREWORD

The Secondary Schools Project, devoted to the general area of allied health, represents a significant step in the adjustment of high school programs toward the goal of relevancy. It provides an opportunity for high school students to have a variety of experiences in a family of occupations in the health field. To a very large extent, this program is new in secondary education. Although some schools have experimented with specific programs such as one for the nurse's aide, the allied health program covers a wide range of occupations related to patient care, clinical assistance, and facilities support and administration.

Evaluation of the Secondary Schools Project was planned as an integral part of the experimental and demonstration program. Evidence was sought upon which value judgments concerning the program could be made and which would also suggest curricular changes.

The evaluation program was planned and conducted under the direction of Dr. Clarence Fielstra, Professor, Graduate School of Education, University of California, Los Angeles. Dr. Barbara Rosenquist Chrispin, Research Analyst, Division of Vocational Education, University of California, Los Angeles, assisted with the implementation of the evaluation plan.

The evidence seems unquestionably to indicate that an allied health curriculum in the secondary schools can produce commendable educational results. The Secondary Schools Project is generalizable for other high schools and has been considerably expanded during the school years 1971-1973.

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BACKGROUND OF THE PROJECT

In this monograph there is presented a summary evaluative report regarding the Secondary Schools Pilot and Demonstration Project for an Introduction to the Allied Health Professions. The three-year pilot project was part of the UCLA Allied Health Professions Projects, a national curriculum research and development program funded by the U.S. Office of Education. Full descriptions of the pilot project are included in a monograph entitled *Background, Program, and Progress of the Secondary School Project* (October, 1970) and in a monograph entitled *Program Guide – A Guide for Development and Operation of a Secondary Schools Allied Health Career Program.*

The planning of this project appeared to be most appropriate because of several interrelated factors on which it was based. First of all was the factor of extensive "dropping out" of pupils from inner-city high schools, and most of these "dropouts" were without employable work skills. Secondly, the secondary school curriculum, especially for students belonging to minority or "disadvantaged" groups, was widely criticized as being insufficiently relevant to the realities and problems of life. Finally, in his 1968 Manpower Report, the U.S. Secretary of Labor stated that there was a need for half a million more workers in the health occupations. The report indicated that ten thousand new workers in that field would be needed each month.

This pilot project was, therefore, designed to enrich the secondary school program with interesting and applicable knowledge, skills, and attitudes in the field of health; to afford pertinent career education in the schools and in cooperating hospitals; to provide induction at an appropriate rung of the career ladder in an occupational field which needed more manpower; and thus to reduce the number of high-school "dropouts," to reduce unemployment of youth, and to help overcome shortages of manpower in health occupations.

Nature of the Program

The instructional and supervised work experience aspects of the pilot project covered a three-year period, beginning in September, 1970; and the program involved the cooperation of four hospital/secondary school/community college complexes in the Los Angeles area.

Each of the three one-year phases into which the program was divided was designed to meet specified subobjectives. To meet the first-year subobjectives, a task-oriented course integrated with exploratory visits to health-care facilities and some preliminary training in those institutions was offered. This course of study included an overview of allied health occupations. Occupational information was obtained from hospital personnel during student visits and from films, lectures, and library research. Students were given not only theoretical background regarding health occupations but also specific training in them, thus being helped to bridge the gap between academic and vocational education. Classroom activities were related to the world of work in such a manner as to enable students to see the relevance and applicability of what they were learning.

The second-year course of study consisted of an organized work experience program in which the students learned specific tasks in health occupations of their choice. The choice made by each student was based on his stated career goals, growing out of his experiences during the first year of the program. During this second year, each student was enabled to have a close look at his specific vocational choice in order to decide if the choice was appropriate for him. If he found the choice to be inappropriate, he was helped to make a selection of another health occupation in which he would have exploratory work experience.

The program during the third year of the project was tailored as much as possible to the needs of individual students. It was, however, basically devoted to cooperative education in which students were employed part time in various health-care facilities. This work during

Phase III was supplemented by related technical courses in high school, a community college, or skill center.

As the result of his participation in the several phases of the program, each student was expected to demonstrate progress in the achievement of the following broad objectives:

1. He will be prepared to make an appropriate career choice of an allied health occupation.
2. He will continue in an advanced educational or training program and/or will be employed in an allied health occupation.
3. He will be able to function satisfactorily as an employee in the health-care system.
4. He will be a knowledgeable consumer of health-care services.

Organization of This Report

The descriptive and evaluative data presented in this summary report on the Secondary Schools Project for an Introduction to the Allied Health Professions are organized under the following major headings:

Students who participated in the program

Student interest in the learning experiences offered in the program

General quality and effectiveness of the program

Student progress toward achievement of the performance objectives of the program

Contributions of the project to the extension and implementation of allied health career programs in secondary schools

Summary of findings, conclusions, and recommendations

STUDENTS WHO PARTICIPATED IN THE PROGRAM

Criteria Used for Student Selection

In the selection of students for participation in Phase I of the Secondary Schools Project, the criteria used were: sex, grade-point average, and interest. The goal was to have a project class composed of 25 tenth-grade students in each of four inner-city schools. In each of these classes there was to be an approximately even division of the sexes of the students; and each class was to be composed of students from varying ability levels – 15 percent selected from the upper-ability level (G.P.A. from 3.0 to 4.0), 60 percent from the middle-ability group (G.P.A. from 2.0 to 3.0), and 25 percent from the lower-ability level (G.P.A. below 2.0). Each of the 100 students selected was expected to show genuine interest in the program and to express a desire to participate in the health field.

Process Used in Student Recruitment and Selection

One of the field coordinators on the staff of the Secondary Schools Project visited the ninth-grade homerooms in each junior high school feeding into the four project schools, passing out brochures about the program and asking students to take them home and to read them overnight. The following day, the field coordinator returned to the homerooms, gave a brief orientation to the program, and answered questions posed by the students. He then collected the application blanks from interested students, and interviews were scheduled in each junior high school for the students applying to the program.

The students were subsequently interviewed by the field coordinator in groups of 5 or 6, following a suggested interview format. This procedure was designed to expedite the use of time necessary for interviewing (there were 350 applications from one school), as well as to

provide a peer-group situation in which each student would feel comfortable while expressing his feelings and show himself off to his best advantage.

During each interview, the field coordinator attempted to identify a sincere interest in the program and some relationship between the student's stated career interest and potential opportunities in the health-care system. Following the interviews, between 75 and 100 students were chosen at each junior high school from the group interviewed as prime candidates. For each of these students, the school cumulative folder was pulled and information recorded as to attendance record, test scores, previous high school cumulative grade-point average, and behavior record.

Students were rejected from further consideration if any of the following characteristics were indicated in the cumulative record:

1. Tagged in some way to denote a deep-seated emotional problem
2. Suffering from chronic illness
3. Prolonged absenteeism resulting from poor health
4. Classified as EMR, TMR, or EH

Subsequently, the remaining prime candidates were categorized on the basis of the students' sex and ability level. The final selection was determined by the number of openings in each category and by the final judgment of the field coordinator. (An alternate list of 25 students, fitting the same configuration of criteria as the selected group, was chosen from the remaining students.)

The parents of the 25 selected students were then individually contacted regarding their interest in having their children involved in the program. Any student selected for the program was replaced from the alternate list of students if his parents failed to give approval.

As soon as the "active" and "alternate" lists had been prepared, students were notified by mail of their place on the list. After letters had gone out, the field coordinator checked with each student on the active list to make sure he was still interested. This was done again approximately three weeks prior to the opening of school. Any vacancies which developed were filled by students from the alternate list.

The approximate composition thus obtained in each of the four classes in the project is depicted in Table I which follows:

Table I

Student Composition of Each Project Class

Sex	Ability Level			
	High (GPA = 3.0-4.0)	Middle (GPA = 2.0-3.0)	Low (GPA = below 2.0)	Total
Males	2	7	3	12
Females	2	8	3	13
Total	4	15	6	25

Reasons Students Applied for Participation in Program

More than 900 students applied for participation in Phase I of the Secondary Schools Project, and 100 students were selected. The reasons given for wishing to take part in the program fell into these six categories:

1. Specific interest in an allied health occupation (27 percent)

   "... want to be a nurse; this program will help me."

   "... always have been interested in medical field."

2. General interest in career planning and decision making (21 percent)

   "... sounds interesting, might help me decide what to do."

   "... to see what it's all about."

3. Interest in helping people (16 percent)

   "... to help people in their health."

   "... like working with people and children who are sick."

4. Interest in getting a job and earning money (14 percent)

   "... to earn and learn at the same time."

   "... love to work; money would help."

5. General interest in self-improvement (10 percent)

   "... sounds very educational."

   "... to have a good experience."

6. No reason stated on application (12 percent)

Ethnic Characteristics of Students in the Program

Students who participated in the program were enrolled in the following inner-city high schools: Fremont High School (Los Angeles), Jordan High School (Los Angeles), Lincoln High School (Los Angeles), and Polytechnic High School (Long Beach). The ethnic origins of these students are shown in Table II.

As may be observed in the table, more than 90 percent of the students who took part in the program were members of ethnic minorities, and the percentage of Black students far exceeded all of the others.

Table II

Ethnic Origins of Students in the Allied Health Occupations Project (1970-1973)

Ethnic Origins of Participants	Percentage of Participants		
	1st Year	2nd Year	3rd Year
Asiatic	5	1.6	2.7
Black	62	74.2	75.7
Mexican-American	21	19.7	13.5
White	12	4.5	8.1

Ability Levels of Students in the Program

The ability levels of students who were enrolled in the three-year program are shown in Table III.

Table III

Ability Levels of Students in the Allied Health Occupations Project (1970-1973)

Ability Levels	Percentages of Participants		
	1st Year	2nd Year	3rd Year
Upper (GPA = 3.0-4)	16	14.3	10.8
Middle (GPA = 2.0-2.9)	60	68.8	62.2
Lower (GPA = less than 2.0)	24	16.9	27.0

Probably the most significant fact shown by the table is that the percentage of upper-ability level students in the program declined during both the second and third years of the project. Reasons for this decline were (1) that some of the upper-ability students (or their parents) were fearful that universities might not accept for entry credit some of the work done in the project, and (2) that academic requirements in the high schools for college-preparatory students sometimes conflicted with requirements of the project.

Numbers of Participants in the Program

One hundred students were initially enrolled in Phase I of the program. In the course of the year, eighteen students discontinued their involvement in the program for the following reasons: left school or transferred to other schools (8), transferred to more academic programs (4), no longer interested in health field (3), program hours conflicted with interest in sports (2), and married (1).

A total of seventy-seven students (thirty-eight males and thirty-nine females) who had completed Phase I of the program during their sophomore year in high school subsequently enrolled in Phase II at the beginning of their junior year. Eleven of these students discontinued their participation in the program before the end of the year for these reasons: dropped out of school (2), transferred to another school (2), took another job (2), gave more time to school sports (1), had to give more time to family work (1), had to meet a specific academic requirement (1), took another medical course (1), and no longer interested in health-care occupation (1).

A total of sixty-two seniors who had previously completed Phase I and Phase II of the program enrolled in Phase III. None of these students dropped out of school during the year, but two of them transferred to other schools. Of the students who remained in the program,

sixteen worked for pay, twenty-one worked without pay (except for transportation costs), and twenty-three fulfilled other requirements for graduation.

STUDENT INTEREST IN THE LEARNING EXPERIENCES OFFERED IN THE PROGRAM

Interest in Curriculum Topics (First Year)

The school schedule of the students who took part in the Allied Health Project was so arranged during the first year of the program as to include a daily two-period block of time in the afternoon, immediately after lunch, to be devoted to the program. The curriculum during the first year was divided into three modules, which are briefly described below:

Module I included an "Introduction to the Allied Health Professions Projects" and an "Introduction to the Health Care System." Seven field trips to health facilities supplemented classroom study during this two-month module.

Module II dealt with "Meeting the Needs of the Patient Through the Health Care System." Included were presentations of seven case studies related to common health problems. With regard to each case, the following matters were considered:

1. The health facilities and personnel involved in handling the problem; career ladders of health personnel
2. Anatomy and physiology related to the health condition being analyzed
3. Personal and social complications of the health problem
4. Medical terminology related to the problem
5. Specific job tasks involved in care of problem
6. Communication and interpersonal relations involved in care of problem

In the course of the seven case presentations, the students were introduced to forty-five hospital occupations and to thirty-two hospital tasks involved in patient care. They also learned to identify and use twenty-three pieces of equipment. Numerous field trips supplemented classroom study throughout the entire module.

Module III was concerned with "The Health-Care Complex." As part of this module, students were (a) prepared for having an exploratory work experience in a hospital and (b) given a supervised month-long work experience in the hospital. During the month of May, the students were bussed to the cooperating hospital in their complex. Daily, from 1 to 3 p.m., they performed tasks which had been arranged for them by the field coordinator and hospital supervisors. Occupational areas were changed weekly, so that students could be exposed to activities and career opportunities in the following fields: patient care, facilities support, technical services, and clinical services.

Student Interest in Learning Experiences – Curriculum Topics

One aspect of the evaluative study reported in this monograph was the administration of a student-interest inventory. The interest inventory was divided into these parts: curriculum topics, health-care tasks, field trips, and learning methods used. Students were requested to rate each of the items listed under the above headings as being "very interesting" (10 points), "interesting" (5 points), "uninteresting" (-5 points), "very uninteresting" (-10 points), and "not covered in class" or "don't know" (0 points).

On the basis of returns from sixty-six students, Table IV shows, in rank order, the average interest score given to curriculum topics included in Phase I of the project.

Table IV

Student Interest in Curriculum Topics

Topic	Average Interest Score (From -10 to +10)
Hospital experience	8.4
Relationship of individual to community health and social problems; e.g., alcoholism, Rubella	6.9
Mental health and drug overdose (Case VI)	6.7
Maternal and child care (Case V)	6.5
Folk medicine; quackery	6.1
Fractured leg and hospitalization (Case II)	5.3
Pollution problems; emphysema (Case IV)	5.1
Environmental health; sanitation and food processing (Case III)	4.9
Midwifery	4.6
Introduction to AHPP; hospital observation	3.9
Problems of the present health-care system	3.8
High school physical examination (Case I)	3.2
Components of the health-care system – hospitals, clinics, and other community health agencies	3.1
Ethics of the healing arts	2.4
Health manpower needs	1.9
The health worker and the law	1.2
The role of the learner	0.9
Health insurance	-0.3

One clear inference that can be made from a study of Table IV is that the students were most interested in topics that related to their immediate lives. For instance, they were much interested in quackery, folk medicine, and maternal and child care because of the direct relationship of these topics to health practices in their homes today. Similarly, they were much interested in information regarding venereal disease, drug use, and mental health because of the immediate usefulness of such information. On the other hand, they had relatively little interest in the "more removed" topics such as health manpower needs and the health worker and the law.

Some further explanation may be given of the actual disinterest in the topic of health insurance. Material on this topic used by the students was chiefly in the form of "programmed instruction," and apparently the reading level required to use the materials was too high for most of the participants in this project. As a resuit, the students were frustrated and "turned off."

By far the most interesting aspect of the curriculum, according to student ratings, was the hospital experience itself. On the other hand, however, the students expressed very little interest in the following topics studied as part of their preparation for the hospital experience: attitudes and behavior appropriate to the world of work, ethics of the healing arts, the health worker and the law, and the role of the learner. Lowered interest in these topics appeared to result chiefly from two factors – the students' resentment of what they considered to be indoctrination and their frustration in the reading and use of programmed materials prepared by the AHPP Center for dealing with the topics.

Interest in Health-Care Tasks (First Year)

Table V shows, in rank order, the average interest score given by the students to the health-care tasks with which they had become acquainted during Phase I of the project. It should be noted that the average interest scores given in the table were computed on the basis of scores given by only those students who reported that they had had experiences with the tasks. Although all of the tasks listed in Table V were recommended for students in each of the four schools taking part in the project, many of the tasks were not performed in one or more of the schools; the chief reason for this fact was the lack of necessary equipment or facilities for the task in those schools. The range in the number of students who reported having an experience with a particular health-care task was from a high 62 (out of a possible total of 66, the number of interest inventories analyzed) to a low of 14. The task performed by 62 students was the filling out of a hospital admission form, and the task performed by only 14 students was that of performing the PKU test.

Evidence that students in the project enjoyed learning and performing health-care tasks was marked. Since the highest rating they could give any task was a "plus 10" (very interesting) and the lowest score they could give was a "minus 10" (very uninteresting), it is significant to note that only two of the thirty-seven tasks rated were given average scores of less than "plus 1"; and seventeen of the tasks were given average scores of "plus 5" or higher. Quite clearly, the students enjoyed the "learning by doing" which was involved in the performance of the health-care tasks. In their free-response comments, many of the students expressed the recommendation that more tasks be taught in subsequent replications of Phase I of the project.

Table V

Student Interest in Health-Care Tasks

Tasks	No. of Students Having Experience	Average Interest Score (From -10 to +10)
Blood typing	33	7.2
Taking and recording blood pressure with sphygmomanometer	59	7.1
Listening to heart with stethoscope	60	7.0
Taking blood count	18	7.0
Taking pulse, using a stopwatch	57	6.7
Splinting a broken leg	56	6.5
Positioning a patient (postural drainage)	15	6.3
Casting	49	6.2
Streaking and examining agar for bacterial growth	44	5.9
Measuring weight, using balance scale; measuring height	55	5.8
Using microscope	35	5.8
Taking temperature, using Fahrenheit thermometer	54	5.7
Treating patient for shock	31	5.4
Taking respiration rate	52	5.3
Performing PKU test	14	5.3
Using hydrotherapy	40	5.3
Performing artificial respiration; mouth-to-mouth resuscitation	21	5.0
Performing vision test, using Snellen Chart	61	4.8
Placing patient on guerney and transporting	40	4.8

Table V (Continued)

Student Interest in Health-Care Tasks

	No. of Students Having Experience	Average Interest Score (From -10 to +10)
Interviewing health personnel and others	53	4.7
Testing reflexes, using percussion hammer	52	4.4
Taking dictation and recording vital signs	42	4.4
Analyzing and evaluating health information (quackery, folk medicine)	54	4.1
Performing urine tests	58	3.9
Walking on crutches	41	3.9
Performing closed cardiac massage	17	3.8
Autoclaving	35	3.8
Measuring vital capacity with spirometer	27	3.3
Filling out medical history and physical examination forms	57	2.1
Filling out hospital admission forms	62	2.0
Designing meal plans	38	1.7
Terminal digit filing	61	1.4
Contacting community services on telephone	35	1.4
Measuring with a centimeter ruler	31	1.2
Making beds	48	1.0
Alphabetical filing	61	0.8
Filling out health insurance forms	59	-0.2

The need for differentiating curricular activities in terms of greatly varying abilities and interests of students in the project became dramatically apparent during the analysis of the data reported in Table V. The *range* in student interest in many of the tasks was remarkably great. For example, the task of filling out health insurance forms (the task which received the lowest average interest score from the total group) was given the rating of "very interesting" by nine students, the rating of "interesting" by nineteen students, the rating of "uninteresting" by twenty-four students, and the rating of "very uninteresting" by nine students. Similarly, the task of making beds (which received next to the lowest average interest score) was rated "very interesting" by seven students, "interesting" by twenty-one students, "uninteresting" by fifteen students, and "very uninteresting" by five students. An almost equally broad range of student interest was expressed in the following tasks: alphabetical filing, terminal digit filing, designing meal plans, contacting community services by telephone, and filling out hospital admission and medical history forms. Therefore, even though average interest scores for such tasks were relatively low, the keeping of the tasks in the program is essential, especially for the fifty percent or more of the students who find them "interesting" or even "very interesting."

Interest in Field Trips

The taking of field trips was ranked by the students as an outstandingly interesting aspect of the project. The nature of the field trips varied from school to school, and no attempt is made in this report to compare the schools in the interest quality of the trips which each provided. Instead, there are listed below (in rank order) the five field trips which students rated as being most interesting of all the field trips offered by their schools:

Most Interesting Field Trips – Fremont High School

1. To St. Francis Hospital – introductory observations
2. To Children's Hospital – Adolescent Clinic
3. To UCLA – AHPP pollution exhibits
4. To Harbor General Hospital – orthopedic service
5. To Martin Luther King Hospital – site visitation

Most Interesting Field Trips – Jordan High School

1. To Harbor General Hospital – introductory observations
2. To Harbor General Hospital – internship
3. To Morningside Hospital – "career happening"
4. To Fremont High School – Hawaii Five-0 film on quackery (film)
5. To Memorial Hospital – "career day"

Most Interesting Field Trips – Lincoln High School

1. To Fremont High School – Hawaii Five-0 Film on quackery
2. To Children's Hospital – Adolescent Clinic
3. To Cedars-Sinai Medical Center – film on childbirth
4. To Cedars-Sinai Medical Center – observing physical therapist services
5. To Cedars-Sinai Medical Center – observing orthopedic technician services

Most Interesting Field Trips – Long Beach Polytechnic High School

1. To Harbor Hospital – ortho-technician case demonstration
2. To Long Beach Free Clinic – tour of facilities
3. To St. Mary's Hospital – introductory observations
4. To Fremont High School – Hawaii Five-0 film on quackery
5. To Cedars-Sinai Medical Center – physical examination and medical history

Among the most common free-response comments made by the students on evaluation forms which were given to them after the completion of each trip were statements to the effect that they most enjoyed going to places where the personnel being visited made them feel welcome and worthy of attention and assistance. On the other hand, students expressed considerable disappointment and unhappiness regarding visits to personnel who failed to show up, arrived very late, or showed little interest in the students or in their questions.

Student Reaction to Learning Methods Used in First Year of Project

Student ratings of twenty-three "methods of learning" used in the first year of the project are summarized in Table VI. As was the case in other ratings by the students, the rating of learning methods was based on the following four-point scale: very interesting (plus 10), interesting (plus 5), uninteresting (minus 5), and very uninteresting (minus 10).

Table VI

Student Reaction to Methods of Learning Used in First Year of Project

Method of Learning	No. of Students Experiencing the Method	Average Interest Score (From -10 to +10)
Taking field trips to health-care facilities	62	7.9
Using films, slides, records, and other audiovisual materials	62	7.6
Performing laboratory activities and hospital tasks in the classroom	54	7.4
Working with "buddies"	43	6.8
Having classroom discussions, "rap" sessions	60	6.6
Having guest speakers	62	6.2
Performing in plays, skits, charades, and games	63	6.2

Table VI (Continued)

Student Reaction to Methods of Learning Used in First Year of Project

Method of Learning	No. of Students Experiencing the Method	Average Interest Score (From -10 to +10)
Having demonstrations by teacher or guest	61	6.1
Having tutorial assistance	55	6.1
Interviewing hospital personnel and others	61	5.6
Role-playing and improvising	48	5.4
Having debates	58	5.4
Making posters, cartoons, drawings, charts, and exhibits	61	5.1
Collecting health-related information	59	5.1
Using programmed learning modules	45	4.2
Presenting reports of individual research to class	60	3.8
Doing independent reading	55	3.0
Doing library research	53	2.3
Keeping personal notebooks and occupational files	62	2.0
Reading aloud – student	58	0.6
Reading aloud – teacher	55	0.3
Writing reports	59	0.2
Listening to lectures	59	-0.5

Three of the methods used in the project were almost unanimously rated as being either "very interesting" or "interesting." These methods were taking field trips, using audio-visual materials, and performing laboratory activities. Only one method was given an average interest score which was on the "minus" or "uninteresting" side of the scale, and that score was "minus .5" (the average score given to listening to lectures). Three other methods were given very low "plus" scores; these were: reading aloud – student, reading aloud – teacher, and writing reports.

Regarding the learning methods which were given the lowest average interest scores, it is especially interesting to note that the range of ratings given by individual students was very great. For example, the lowest-scored method – listening to lectures – was given ratings of "very interesting" by eight students, "interesting" by twenty-three students, "uninteresting" by eleven students, and "very uninteresting" by seventeen students. Similar ranges in individual student ratings were given to these methods: writing reports, reading aloud – teacher, and reading aloud – pupil. The four learning methods which were given the lowest average interest scores were actually rated "very interesting" or "interesting" by well over fifty percent of the students. It seems clear, therefore, that the retention of these methods, especially for pupils who do find them interesting, would be desirable. Equally clear is the fact that many and diversified learning methods must be used in this project, which was designed for inner-city students of varying abilities and interests.

Student Interest in Learning Experiences Provided by Hospitals During Second Year of the Project

The learning experiences which were afforded students who participated in Phase II of the UCLA Secondary Schools Project were largely determined by the functions of the hospital departments in which they worked. For example, a student who worked in radiology had learning experiences which were very different from those had by a student who worked in physical therapy or in nursing. Another factor which influenced the nature of the learning experiences of a given student was the readiness of that student to take part in various experiences. For instance, a highly motivated, conscientious, capable student learned many more tasks and higher-level tasks than did a student who was relatively indifferent or less capable.

The assignment of students to hospital departments was based as much as possible on the students' expressed interests and preferences. These preferences had been developed during the latter part of Phase I of the project as a result of exploratory work experiences which the students then carried on. The field coordinators of the project sought hospital departments in which each student could work at a job he was especially interested in. The coordinators also found hospital supervisors who would oversee and evaluate each of the student's work experiences.

In Table VII are shown the numbers of students in the project who were working in the various hospital departments at the conclusion of Phase II.

Table VII

Numbers of Students Working in Various Hospital Departments

Hospital Department	No. of Students
Nursing	23
X-ray	10
Clinical Laboratory	6
Physical Therapy	4
Pharmacy	3
Social Work	3
Engineering	2
Business	2
Inhalation Therapy	2
Personnel	1
Central Services	1
Neurological Laboratory	1
Animal Laboratory	1
Housekeeping	1
Occupational Therapy	1

Since this was a pilot project, no predetermined list of tasks was prescribed for inclusion in the learning experiences to be provided by a hospital department. The clinical instructors or supervisors in each of the cooperating hospitals, therefore, were free to teach those tasks which were most significant and most feasible in terms of the students' interests and abilities and the availability of facilities in the hospital.

Examples of lists of experiences (tasks) which were afforded the students in selected hospital departments are presented here:

Nursing

Recording temperature, pulse, and respiration
Running errands; answering the telephone
Assisting with serving trays
Assisting physician during examination of patient
Making unoccupied bed
Making occupied bed
Helping to ambulate a patient
Giving verbal reports regarding patient
Transporting a patient
Assisting in general care of patient
Answering patients' call lights
Giving back rubs
Assisting in care of patient units
Reading patient charts
Feeding patients
Putting patient on bedpan
Making admission charts
Filling water pitchers
Picking up medicine from pharmacy
Measuring urine output
Testing urine for sugar
Visiting patients
Making daily census sheets
Graphing patient's temperature
Helping patient in and out of bed
Combing patient's hair
Delivering flowers to patient

Radiology

Filing X-ray films

Filing reports

Mailing reports

Running errands to various departments

Unloading and reloading cassettes

Marking films

Processing films

Transporting patients to department and back to their rooms

Assisting technologist in positioning patients

Assisting in use of portable X-ray unit

Physical Therapy

Filling out data card on patient

Recording patient progress report on chart

Working with patients who can ambulate

Fitting patients' crutches

Giving patient upper-extremity exercises

Giving patient lower-extremity exercises

Transporting patient back to bed

Giving precrutch training exercises

Cleaning, filling, and emptying whirlpool

Mixing sterilization solution

Using Hudson Sprayer

Using neck hot packs

Removing dressings

Neurological Laboratory

Cleaning glassware

Making solutions:

Cleaning solution
Formalin solution
Lithium carbonate
5% acid alcohol

Sterilizing biopsy clamps

Labeling slides

Filing slides

Labeling paraffin blocks

Picking up and delivering paraffin blocks, film, biopsy clamps

Storing chemicals

Cleaning up laboratory

Engineering

Replacing air conditioner filters

Cleaning air conditioner filters

Overhauling window unit air conditioner

Overhauling cleaning coils of air conditioner

Assisting in overhauling water pump

Cutting and threading pipe

Rebuilding ice machine water pump

Assisting in installation of wall heater

Changing belts on kitchen door

Calibrating thermostat in X-ray

Cleaning cooling tower basin

Repacking elevator motor bearings

General supervision of the entire program, as well as liaison between the secondary schools and the hospitals throughout Phase II, while the students were having the work experiences referred to above, was provided by the Deputy Director of the Secondary Schools Project and by the field coordinators on his staff. The UCLA project gave each student in this phase of the program a stipend of fifteen dollars per week. Transportation from the

school to the hospital and back was also provided each student by the project; this was accomplished primarily through use of station wagons which the project acquired for that purpose when it was found that school buses and public buses could not adequately provide "individualized" transportation service at the various times and locations required.

Student Interest in Learning Experiences Provided by Hospitals During the Third Year of the Project

Since, in general, student experiences in the program during the third year of the project were continuations of the kinds of experiences they had had during the second year of the project, it was expected that the students' expressions of interest would be similar during the two years; and that was, in fact, the case. As was true during the second year of the project, so also during the third year of the project students showed greatest interest in working in the following hospital departments (in rank order of preference): (1) nursing, (2) X-ray, (3) clinical laboratory, and (4) physical therapy.

In a subsequent section of this report, under the heading of Student Appraisal of the General Effectiveness of the Program, direct quotations from students regarding interest in their learning experiences during the third year of the project, as well as during the first and second years of the project, are presented.

GENERAL QUALITY AND EFFECTIVENESS OF THE PROGRAM

In this section of the evaluative report, the following comparisons and appraisals are presented:

1. A comparison of the project group with a control group in grade-point averages
2. A comparison of the project group with a control group in dropouts from school
3. General appraisal of the project by student participants
4. General appraisal of the project by parents of the participants
5. General appraisal of the project by hospital supervisors
6. General appraisal of the project by national leaders in the field of health care

Thus, in the first two parts of this section, data are presented relative to the relationship between participation on the project and success in school as indicated by superior grade-point averages and by greater retention in school. In the remaining parts of the section, evaluative opinions of the project as expressed by selected personnel are reported. Data and opinions regarding student progress toward achievement of certain performance goals of the project are presented in the section of the report which follows this one.

Comparison of Project Group With Control Group in Grade-Point Averages

As shown in Table VIII, students in the Allied Health Project had a grade-point average of 2.4 prior to beginning work in the project (September, 1970). After maintaining that average during the first year of the project, they actually performed at a somewhat higher level during both the first and second semesters of the second year (Phase II) of the project. An equated control group of students whose grade-point average was 2.5 in September, 1970, earned a g.p.a. of 2.4 during the first semester of Phase II of the project and a g.p.a. of 2.3 during the second semester.

Thus, while students in the Allied Health Program showed a slight improvement in academic performance between September, 1970, and June, 1972, students in the control group showed a net decline in their performance during that period.

Table VIII

Grade-Point Averages of Project and Control Students

Students	G.P.A. in Sept., 1970	G.P.A. for First Sem., Phase II (Jan., 1972)	G.P.A. for Sec. Sem., Phase II (June, 1972)	Net Change in G.P.A.
Project (N=64)	2.4	2.5	2.5	+0.1
Control (N=45)	2.5	2.4	2.3	-0.2

Comparison of Project Group With Control Group in Dropouts From School

One of the objectives of the Secondary Schools Pilot Project was the greater retention of disadvantaged youth in the high school. As indicated in Table IX, this objective was apparently achieved during the first two years of the project. The table shows that by the conclusion of Phase II of the project, only 2.6 percent of the participants in the program had dropped out of school. Almost three times greater was the dropout rate of students in an equated control group.

Table IX

School Dropouts During First Two Years of Project

Students	Percent Who Dropped Out of School
Project	2.6
Control	8.9

The percentage of students who transferred to another school was also much lower for the students in the Secondary Schools Project than for students in the control group. As can be seen in Table X, the percentage of the former was less than half the percentage of the latter.

Table X

School Transfers During First Two Years of Project

Students	Percent Who Transferred to Another School
Project	16.7
Control	34.2

School attendance during each of the first two years of the project was about the same for project participants and for students in the control group. There was less than half a day difference per year between the records of the two groups. As shown in Table XI, both groups had somewhat better attendance records during the second year (as juniors) than they had had during the first year (as sophomores).

Table XI

Student Attendance Records During First Two Years of Project

Students	Days Absent First Year (mean number)	Days Absent Second Year (mean number)
Project	19.6	15.1
Control	19.3	14.8

General Appraisal of Phase I of the Project by Student Participants

Already presented in the section of this report dealing with student interests in the learning experiences offered in the project are tabulations of the students' reactions to the curriculum topics, health-care tasks, field trips, and learning methods which were incorporated in Phase I of the project. As earlier noted, the range of these reactions was great in every category listed above, but average interest scores for almost every topic, task, trip, and method were on the plus side of a scale that ranged from minus 10 (very uninteresting) to a plus 10 (very interesting). Generally, then, the students considered the learning experiences of Phase I to be of interest; and many of the experiences they considered to be excitingly interesting.

To supplement student reactions to specifically listed learning experiences, a form was designed to obtain free-response statements from students regarding "what they liked *best* about the program and what they liked *least* about the program." The critical incident technique was utilized.

The students' positive responses to the form most frequently fell into five categories. These categories, together with a few selected excerpts from the students' comments, are listed below in rank order of frequency:

1. Learning technical skills and tasks

   ". . . learning to take blood pressure, temperature, pulse, height and weight; learning how to use medical instruments."

2. Learning about health problems and concerns

   ". . . quackery; knowing about it will help me help others."

   ". . . learning about the human body; seeing how other people react to treatment and surroundings."

   ". . . learning how different diseases are caught and spread."

3. The classroom "rap" sessions and discussions

   ". . . letting us discuss what we think is important."

   ". . . picking subjects to research and to report on to the class."

   ". . . discussing health problems and drugs, trying to find solutions."

4. Hospital experience and field trips

   ". . . when shown around the hospital and placed in certain places to learn."

   ". . . learning how to be responsible for self in hospital."

   ". . . learning about careers in medical field."

5. Role-playing, debating, putting on skits and plays

   ". . . acting out things we learned in class; educational, fun, interesting."

   ". . . doing skits on quackery."

Negative incidents most frequently described by the students on the free-response forms fell into these categories:

1. Failure of health-care personnel to keep appointments

   ". . . when people don't show up for appointment."

   ". . . waited until time almost up before lady came."

". . . visiting a department, and department head has gone home."

". . . trip to hospital when no one is there to meet us; nothing to do."

2. Being ignored or unappreciated

". . . when people didn't know who we were and why we are there."

". . . no one to show me around."

3. Having inadequate leadership

". . . when teacher doesn't know topic."

". . . when people we are interviewing don't know their field."

". . . listening to nurses talk about jobs when it seemed they didn't know what they were talking about."

4. Dealing with tasks that are too menial

". . . housekeeping tasks are dull and don't require high school education; why included in project?

". . . discussing the housekeeper is not encouraging to young Blacks; not for college-bound students."

". . . fixing a bed is dull."

5. Having to do too much writing

". . . when we just sit and write all the time."

". . . writing papers and making reports."

". . . writing notes all the time, sometimes on useless subjects."

General Appraisal of Phase II of the Project by Student Participants

At the end of the first semester and again at the end of the second semester of Phase II of the Secondary Schools Project, student participants were also asked to state "what they liked *best* about the program and what they liked *least* about the program." The responses concerning what they liked best were much more numerous than the responses concerning what they liked least. Furthermore, the positive responses were written in considerably more detail than were the negative ones.

A representative sampling of the positive comments is presented below:

I have learned about patient care, how to work with people and understand them. I have learned something new from each one.

• • •

My most interesting and useful experience was getting into the different hospital departments and finding out about them.

• • •

I like what I'm doing. I like working with people and meeting new people. And I like helping people.

• • •

My most interesting and useful experience in the project at the hospital was working in the pharmacy. In the pharmacy there was a lot to do, which was the most fun, and it helped me with my spelling in chemistry. The most interesting was watching the pharmacist put medicine together and running the pill machine.

• • •

Everything I did at this hospital when working with the patient is interesting, and I like it all.

• • •

I think everything has helped me learn more about the hospital work. I can't really say which part of the work is the most interesting and useful. I've met a lot of people. I've learned about how some departments are run. I've learned what goes on mainly in the whole hospital, how each department depends on the other, and how relationships between coworkers and bosses develop.

• • •

The experience I have gained working really helps out. I am depended on, and trusted, which really helps my morale. I super-enjoy helping people and being depended on. In the hospital I am able to work for people. It is all interesting and helpful. I really can't say what's helped me most, because everything has.

• • •

I'm working at the Intercommunity Exceptional Children's Home and have found it to be a very rewarding and beautiful experience. I have become close to the children and teachers. Probably I am learning just as much as the children. I've learned to love other people who are not like me, and have become more responsible for myself and others around me. I've learned understanding and compassion for these retarded children. Many times I reach out to them as much as they do to me . . . . No words can explain the fulfillment and joy that come from seeing these children learn. To watch the children get off the bus and run to you and hug you and kiss you is pure love. For a child to trust in you, to believe in you, and to return your love is fantastic. To be a part of this and to learn how to cope with and handle these children is an unbelievable experience for me.

• • •

My experience in the hospital is helping me to have more confidence in myself. As far as my goals are concerned, it has helped me a great deal – especially with my personality, grooming, working with others, and learning to keep some things to myself.

• • •

I got to know a lot more about how to talk with people, and I overcame my great shyness by getting used to being with different people.

• • •

I have a clearer picture of what it is like in the vocational field I have chosen, and my job now has helped me to make up my mind as to whether or not I really want to pursue this field. It has also given me an idea of what other jobs similar to the one I chose would be like.

• • •

AAHP has been most helpful to me. I have a job working in the field I wish to work in after I finish school, and I have learned a lot that has helped me in my life not only in the hospital but at home.

• • •

I would like to see this program continue at schools, because I think it would be a great help to the students.

• • •

In response to the question as to what experiences in Phase II of the project were least interesting and of least usefulness, almost half of the participants made such comments as the following:

All of my experiences were wonderful.

I found nothing the least bit not helpful in my work.

I liked everything.

I liked the whole project.

I didn't have any dislikes.

I believe everything was useful.

The relatively few negative comments which were made by the students in the program tended to fall into these categories:

1. Monotony of work – "doing same things over and over again."
2. Dullness of activity – "washing glassware"; "cleaning cassettes"; "folding towels, sheets, and pillowcases."
3. Paucity of activity – "least interesting when I didn't have anything to do"; "going to an activity where all I do is watch"; "when there was nothing to do except answer the phone."

Final Appraisal of the Project by Student Participants

Students who completed all three years of the program were unanimous in their expressions of enthusiasm for their benefits from being involved in it. The following are representative excerpts from their written evaluations:

> It was a very interesting program. I enjoyed being a part of it. I also enjoyed the work in X-ray and the people I worked with. I plan to go into the radiology field if the future permits.

• • •

> The program has meant a great deal to me. It has provided summer employment for me, so I wouldn't have to run the streets during the summer. But most of all it has opened up what working in a hospital is all about. It has helped me a lot. I now have a job with the hospital during the week and Saturdays developing X-rays, and someday I hope to become an X-ray technician. I hope the program continues, so that it can help others also.

• • •

> I just can't begin to tell how much I really enjoyed being in the program. I really learned a lot. I enjoyed working in the hospital and seeing for myself what it is like to be a nurse.

• • •

> The Allied Health program has been a big help to me. I have gained the necessary experience I would need to enter the profession I have chosen. It has exposed me to the different vocations available in the medical field and in hospitals in general, which enabled me to decide on my occupational objective. Allied health has also helped me in my home. I learned a lot about symptoms of different illnesses which enabled me to take better care of myself and family.

• • •

This program has meant an awfully lot to me. It has helped me to decide what profession to choose in the future. The program has taught me how to think and act in a job atmosphere. It has taught me how to be independent and how to relate to different people.

• • •

While working in the project, I discovered the importance of having a good job. I also found that having my own money to spend helped me a great deal. I hope this program will continue, and I feel that students who go into it should do so with their minds set on succeeding, not jiving!

• • •

General Appraisal of the Project by Parents of the Participants

Parents' appraisal of the Secondary Schools Pilot Project was gained primarily through free and informal discussions with them during evening meetings arranged for that purpose at their schools. These discussions were recorded by an AHPP staff secretary and subsequently were reviewed and analyzed by the evaluation team. The analyses revealed that the parents were highly supportive of the project and appreciative of the fact that their children had been selected as participants in it.

Among the many commendatory comments made by the parents, the ones made most frequently were to the effect that the project had made the following contributions to their sons and daughters:

1. Increased their interest in school and had helped keep them from dropping out.
2. Helped them begin to make reasonable and wise career choices.
3. Helped them become resource persons for family health information, especially regarding available health-care facilities.

4. Markedly increased their communication with their parents.

5. Helped them to mature, grow up, and "blossom out" as they dealt openly, honestly, and intelligently with the realities of health problems and health care.

6. Provided them with economic advantages derived from their development of salable skills.

The concerns expressed by the parents regarding the project were only these:

1. Is the program academic enough to permit participants in it to count the work toward college admission?

2. Will the participant's earning of money in the project during its work experience phases induce him to get a full-time job immediately, thus utilizing his low-level salable skills at once, rather than continuing his formal schooling until he has climbed to a higher level of occupational competency which is more closely related to his potential for growth and service?

Both of these concerns appeared to be overcome as a result of the bringing out of pertinent facts in subsequent discussion.

Parental opinions concerning progress made by their children toward achievement of the specific performance objectives of the project are tabulated in a later section of this report.

General Appraisal of the Project by Hospital Supervisors

As was stated earlier, each of the students enrolling in Phase II was assigned to work under the supervision of hospital personnel in his area. The job title and level of responsibility of these personnel often differed considerably, including doctor and department head, lab assistant and secretary. Nevertheless, for the purposes of the project and this report, all are designated as "clinical instructors" or "supervisors."

During the second semester of Phase II, these supervisors were asked to appraise the strengths and weaknesses of the program. Their appraisals were gained through informal interviews, using interview guides designed for this purpose, during the supervisors' regular working hours. Altogether, 32 supervisors, from five hospitals, were interviewed. The responses to the items included in the guide were subsequently tabulated and reviewed by the evaluation team. Following are the findings revealed by these analyses:

When asked to respond to the question, "What is your opinion about the AHPP Secondary Schools Project as a training program for allied health workers?", the supervisors were overwhelmingly positive. Their responses appeared to reflect their opinions of this program in comparison to the traditional school-based, academically oriented high school program rather than to other training programs for allied health workers.

Among the many commendatory comments made by the supervisors about the program, the ones made most frequently included the following:

1. Provides the opportunity to make and verify an occupational choice.
2. Provides the opportunity to develop a realistic view of the world of work.
3. Provides the opportunity to develop job responsibility.
4. Provides the opportunity to train in the allied health field.
5. Provides the incentive and means by which to finish high school.
6. Provides a service to the hospital department.
7. Makes a social contribution to the community.
8. Answers a desperate need in education.

The large majority of supervisors responded "Yes" when asked if they thought the program should continue. They also affirmed their willingness to continue as training supervisors for the students in the program. Some concern was expressed, however, about the

program's training value and whether it would really motivate, benefit, and provide enrichment for the students. There was expressed the feeling that:

1. students might be used as cheap labor;
2. students might be assigned the menial and boring jobs that no one else wants to do;
3. supervisors might be too busy to provide a good training experience for the students.

These concerns revealed a strong predilection on the part of the supervisors to support a structured, on-the-job training program in which students learn by design rather than by chance.

Some supervisors also brought up questions concerning the cost and legality of the program. While only a few people raised these issues as problems, they do, nevertheless, have a critical bearing on the practicality of any such venture and the ultimate success of the program.

The director of training in one large private hospital estimated that the cost per student during the initial training (Phase II) did not exceed the salary for the time of the person doing the training and the cost (if any) of materials. Training, she added, was an accepted function of the hospital. The slogan "Develop your staff" is actively pursued, she said, through the willingness of the institution to recognize training as a job responsibility and to use personnel as training instructors.

Compensation of students, on the other hand, was recognized as a cost that would be difficult to arrange in the current budget. (Comments by parents and students, however, indicated that they attached less importance to the stipend than to training as a motivating factor for continuing Phase II.)

The fears of the supervisors who raised questions regarding the legality of students being trained in areas where they do not meet the state age and licensure requirements were alleviated when it was clarified that a written agreement existed between the hospital and the project. This agreement detailed the general duties of both the hospital and the project which allowed for a mutually satisfactory working relationship. In most instances, a specific list of tasks was agreed upon before this agreement was reached, specifying the tasks students would be allowed to perform in a particular hospital and department, and specifying the tasks which the hospital personnel believed they could teach the students. The supervisors were also relieved to learn that the students were covered by both Workmen's Compensation and malpractice insurance through the school district.

Following an open-ended evaluation of the overall quality of Phase II, supervisors were asked to indicate any problems that they were having with specific aspects of the program. The topics covered included: the students, the student task performance list, student assignments and work schedules, monitoring and evaluation, student readiness, and the services rendered by the project staff. An analysis of their opinions is presented below.

Supervisors' Opinions Regarding the Students

The students involved in Phase II of the program, as reported earlier, were a heterogeneous group, including 11th graders from four inner-city schools, both males and females, and individuals from various ability levels and ethnic backgrounds. During Phase I, throughout the month of May, all had been involved in a four-week exploratory hospital experience. During the "May Experience," the students rotated through four departments of their choice, one week in each department, observing, learning, and performing elementary tasks. During the summer (between Phase I and Phase II of the project), approximately half of this group were employed by the hospital under Neighborhood Youth Corps (NYC) funds. Thus, each student had become somewhat familiar with the "climate" of the hospital and had been ex-

posed to the hospital procedures and regulations. Additionally, many were assigned in Phase II to departments in which they had previously worked. With few exceptions, however, all had much to learn about the world of work.

In most cases, the supervisors were as new to the experience of working with high school students as the students were to training in the hospital. Many, however, had worked with older students, an experience which proved to be a decided asset in adjusting to their new training responsibilities.

The majority of supervisors found their students in Phase II to be "enthusiastic," "cooperative," and "willing" and reported no problems in working with them. Those who did report problems most frequently cited poor attendance and inappropriate appearance as being among them. The supervisors were disturbed by students who failed to telephone in or to notify them in some other way that they would be absent. Many supervisors had planned activities in advance or had otherwise come to depend on the student, and were understandably irritated when they did not show up. Further, they were not interested in having a student come in only whenever he or she felt like it.

Many supervisors believed that poor attendance was indicative of the students' accommodation to failure. And because students with poor attendance were often the most unresponsive, there was also a tendency for their supervisors to become indifferent. The result was that in such instances training became negligible or at best sporadic. The supervisors concluded that these students need much positive social reinforcement. This, they believed, could come from a department which takes responsibility for ensuring that it provides a variety of interesting and enriching experiences for the student. These experiences, in turn, would motivate the student to want to be present. It was frequently recommended by the supervisors that the department staffing be planned in such a way that the student's absence

would not affect the functioning of the department. They also recommended that students be required to punch a time card, so that the supervisor would be better able to reinforce punctuality and attendance requirements.

Supervisors' Opinions Regarding the Student Task Performance List

The Student Task Performance List, commonly referred to as the "Task List," was designed to function as an outline of a course of study for Phase II and to provide a record of student performance. The original agreement with each hospital specified that the project would provide curriculum and instructional materials for the students at each hospital in cooperation with hospital personnel. The final curriculum, including all plans for observation and/or clinical experience, however, was to be subject to the approval of the hospital.

This plan anticipated that the task inventories developed by the staff of the Allied Health Professions Project, identifying the tasks that people perform in the various allied health professions, could be used by the supervisors as guides for identifying training activities for the students. The supervisors were requested to select from this list entry-level tasks which they felt the students could learn during the year. The tasks selected were to be compiled into a list and used to make up each student's individual curriculum framework. As each task was learned, that task item was to be checked off on the list and signed by the supervisor. This, in turn, was to be the student's performance record. The advantages of a task-oriented system are many, principally because it is not locked into a job-title, as are many other health occupations training programs. It reduces the possibility of conflicting with the current state age and licensure requirements. For example, entrance into a particular occupation, such as X-ray technician, might be predicated on age as well as on successful completion of a state-approved training program. Generally, high school students would be precluded from entering this occupation on one or both counts. However, there may be tasks

that an X-ray technician does that can be entrusted to the student. It must be left to the hospital to select those entry-level tasks that the student can be trained to perform.

Another major advantage of the task-oriented system is that it provides a record of tasks the student has learned to perform, and for which he might receive credit if he decides to continue advanced training in his selected area. This method, then, lays the groundwork for an open-entry, open-exit performance-based system of education which meets the needs of the student but does not sacrifice the standards of the occupation.

By the end of Phase II, it was found that the student task lists were still in various stages of development and use, depending on the department and supervisor involved. The majority of supervisors enthusiastically supported the philosophy underlying the task lists. Development and use of the lists, however, was found to depend largely on the supervisor's previous experience in student training. Those who had worked with students before reported few problems with the task lists and generally found them helpful. They expressed the belief that the task lists eased their teaching responsibility by providing a framework within which to work. Supervisors in this category, moreover, did not feel locked into a rigid training plan but felt free to move students to different areas or different tasks when something interesting was going on elsewhere. Finally, these supervisors also said that the task lists contributed to the student's development of maturity by making him aware of his learning responsibilities and progress.

The supervisors who were less comfortable with their teaching role reported several problems with the task lists. The most common problems stated were:

1. Identifying and planning tasks for students to do
2. Providing staff to teach students
3. Monitoring activities on a daily basis

4. Knowing when to have students work and when to have them observe
5. Training students in an environment in which many tasks are done infrequently and on a rush basis
6. Providing a variety of learning experiences during the afternoon hours when activity slackens
7. Following the task list under the requirements of the present insurance carrier

Most of the identified problems seemed to reflect a lack of understanding about the task lists and the purpose of Phase II in general. As such, they suggest the need for more orientation of the supervisors at the onset of Phase II and for some type of ongoing inservice training to reinforce their understanding.

Many of the foregoing problems had begun to be resolved by the end of the year as the supervisors became more familiar with the goals of the project and with their areas of responsibilities. Their suggestions for improving the procedure for developing the task lists, in fact, closely corresponded to the original procedural plan, enhanced by the added benefit of their insight into program operation. Specifically, the supervisors recommended that: (1) supervisors be provided with task lists developed in other locations to help increase their understanding of what is within the rules and regulations agreed to by the hospital, and (2) supervisors have the option to change any ready-made lists according to the needs and requirements of the department.

Supervisors' Opinions Regarding Student Assignments and Work Schedules

The procedure for assigning students to departments was reported to have worked out well in most situations. Each student had been asked to select an area or department in the hospital in which he would like to work. Supervisors of all requested areas were then contacted by the field coordinator to find out if they were interested in the program and willing

to cooperate. The program was explained in detail to them, modifications were worked out to achieve a plan satisfactory to both school and hospital, and the specific tasks to be taught were identified. Subsequently, a work schedule was developed for each student, specifying the time and days he was to report to his department.

The basic project plan called for students to make a vocational choice after their exploratory hospital experience in Phase I and then receive training in the area of their choice during Phase II. It was anticipated, however, that students would proceed at different rates and that not all would be prepared to make a decision after Phase I. It was also expected that some would change their minds after having some first-hand experience in a department and finding out what really goes on. Changes were encouraged in these instances as beneficial to the student's overall opportunity to make a realistic vocational choice. In either of these situations, the procedure for assigning students to departments was repeated after counseling with the student and ascertaining his new choice.

Supervisors were inclined to agree that departmental assignments should be based on student choice and that the students should be able to select the area they like and have an interest in. The only problems in using the foregoing procedure were experienced by supervisors involved with students who had made a poor choice or had, for some reason, changed their minds about their area of interest. In these cases, supervisors were more likely to be bothered by attendance problems or have bored students. They were inclined to believe that the May exploratory hospital experience in Phase I was too short a time in which to expect students to make their Phase II choice. Some even believed that many students were given the more menial tasks to perform during that experience, leaving them with a jaundiced view of the department and likely, subsequently, to select a department on the basis of personality rather than function. Suggestions for remedying these problems included having students spend a month or two in a department and then rotate to another until they find an area of

work they really like. Supervisors said that they would be interested, also, in having more information on the student before he enters the department, possibly including the student's reason for interest in the department, his plan for the future, and some personal background data.

Developing student work schedules which correspond to the most productive training periods in the department was reported to be very difficult in most cases because of the school schedule and transportation problems. For these reasons, most students were scheduled for their clinical experience during the afternoon hours and on weekends for an average of 15 hours per week. Supervisors reported that it was difficult to judge the minimum amount of time necessary to make the experience a useful one without considering the educational objective. Ten to twelve hours per week, however, was judged enough to get the student involved.

During the afternoon hours, however, students were often caught in the change of shifts when activity is winding down. In these instances, it was the opinion of the supervisors that the students lost the full benefit of the program because their insight and observation were so badly limited. Concern was also expressed for the fact that no one was responsible for systematically keeping track of the students' hours, and that, in some cases, students were getting their stipend even if they were not reporting to their departments on time or were frequently absent. As mentioned above, it was especially irritating to the supervisors when students failed to notify them when they were going to be late or absent. The expectations of the supervisors in such a situation were clearly contradictory to those that the student had learned to expect in a school situation, where it is assumed that he will produce an "excuse" when he returns to class.

In the opinion of the hospital personnel, this conflict between the educational and employment perspective could be best resolved by giving the supervisors more say in, and re-

sponsibility for, monitoring the student's attendance. They suggested that they receive a copy of the student's work schedules and the school holidays so that they can know when students are skipping. They also suggested that the education or training department of the hospital be informed as to when students are scheduled to be in each of the several departments and that the student be responsible for calling either his supervisor or the Director of Training if he is not coming in.

Additionally, inasmuch as lack of motivation seemed to be a factor related to poor attendance, it was suggested that students be required to keep time cards so that supervisors would be able to notice and comment on attendance and punctuality. It was also suggested that receipt of any stipend be at least partially dependent on attendance in order to help the student become motivated to change his behavior in the desired direction.

Supervisors' Opinions Regarding Monitoring and Evaluation

Throughout Phase II, the field coordinator was responsible for acting as a liaison agent between the school and hospital, resolving any potential or actual problems in the department, and ascertaining whether students were making reasonable progress in their ability to do tasks. For the most part, the field coordinator's contact with the supervisor was on a frequent but nonscheduled basis. The field coordinator normally made his rounds of the various departments according to his own schedule, and discussion with the supervisor was limited to the time available by the supervisor at that particular moment. In the majority of cases, when no problems were apparent, this procedure proved adequate. Weaknesses manifested themselves, however, when problems developed or when supervisors had something specific to discuss with the coordinator. The supervisors reported that in many instances they found it difficult to contact the coordinators at the time they needed to talk to them. They suggested, therefore, that meetings between coordinator and supervisor be made on an appointment basis or at least on a regularly scheduled basis. Supervisors also reported that they

would appreciate getting more information from the coordinator about the students' interests and background as well as some feedback on the students' progress in other respects.

Two forms were used during Phase II of the project to evaluate the student. One, the task list (discussed above), was developed to provide a measure of student performance. Supervisors were to check, on a daily basis, all tasks which the student accomplished successfully. This form was also designed to provide a record of the frequency with which each task was performed. The other form, called the Employer Performance Report, was developed for use by the supervisor in evaluating student behavior and attitude toward his work. Students were rated by their supervisors at the end of each 10-week grading period on attendance, dependability, initiative, job competence, progress on job, relations with others, and appearance.

The main problem with the procedure for evaluating task performance was that of checking activities on a daily basis. In many instances, the lists were long and detailed, and it became quite a burden for a supervisor to sit down and conscientiously go through the list every day. Many supervisors ultimately made the student himself responsible for checking off his activities on a daily basis, and then the supervisors signed the list at the end of the month. The Employer's Performance Report, on the other hand, was unanimously regarded by the supervisors as adequate to the task of describing student work behavior and attitudes.

Supervisors' Opinions Regarding Student Readiness

Supervisors were then asked to identify ways in which they thought students could have been more adequately prepared for participation in Phase II. It was anticipated that their opinions would provide useful feedback for improving the Phase I curriculum. Most supervisors expressed the feeling, however, that they looked more for good work attitudes and the desire to learn on the part of the students than for abilities in any particular area.

As one supervisor expressed it, "It's not necessary for the students to know tasks; they need to come in and get their feet wet." Another expressed the belief that it would not be feasible to provide a core curriculum to a group of students with such varied interests because the tasks which they would need to learn are often unique to a particular field.

Some supervisors, upon reflection, were able to think of general topics worthy of consideration in a preparatory program. These included understanding the functions of the hospital, the psychology of illness, handling patients, work readiness, and professional ethics. Others were able to identify broad areas that are basic to a variety of fields, such as medical terminology, general principles of chemistry and biology, and simple work skills (e.g., how to weigh and read scales). The supervisors also suggested that it would be helpful for them to know the tasks that students could perform before coming to the department, indicating that this would help to get the student involved more quickly in the work. They suggested, too, that supplemental materials which provide some of the theoretical rationale behind task performance would be most useful to the student in moving him along in his area. Without the combination of theoretical and practical experience, they pointed out, the student is limited in his choice of an occupation.

Supervisors' Opinions Regarding Services of the Project Staff

Inasmuch as this was a pilot and demonstration project, it was realized that problems would arise that were not anticipated. Supervisors, therefore, were asked to identify such problem areas and to indicate how the services rendered by the project staff might have been more helpful to them in resolving their problems.

The major problems identified by the supervisors have already been reported above under the various topics to which they apply. Most supervisors, however, said that they thought that many of the conflicts and problems which developed could have been avoided

had communication been better between the project team and the hospital personnel. For example, supervisors cited several instances of problems developing and going unresolved because they did not understand what was expected of them. Were students in the department to help with odds and ends, or to be trained? What were the supervisors' responsibilities? Was the student responsible for turning in a time card? To whom? Was the supervisor responsible for discipline? What was the hospital's commitment to this type of training program?

Many aspects of the program specifically depended on the supervisors, and yet often they did not fully understand the program goals. Some, for example, believed that the May exploratory experience was a frustrating one because it was too short a time in which to really work with the students and to teach them something. The May experience, however, was designed primarily to be exploratory with some "hands-on" experience, doing "odds and ends" tasks.

Some other supervisors did not know that Phase II was designed as a structured on-the-job training experience and were wondering what they were expected to accomplish with the students. When problems and questions arose, moreover, they frequently found it difficult to contact the field coordinator and were at a loss as to how to respond to the student. This was particularly true during the summer while many students were working in the department under NYC.

Probably the most serious breakdown in communication and understanding resulted from the lack of availability to the supervisors of any written agreement between the project and the hospital that they could refer to for guidance regarding insurance coverage and hospital responsibility. A definite need was expressed by the supervisors for a policy statement which would cover each of these points in detail. Numerous recommendations were made also for supervisors' inservice training to prepare them for their new role and responsibilities,

and for meetings with the hospital administration and project or school staff to clarify the boundaries of responsibility and the extent of their commitment.

General Appraisal of the Project by National Leaders in Field of Health Care

On January 9, 1971, at a meeting of the AHPP National Advisory Committee, under the chairmanship of Phillip Williams (Vice President, Times-Mirror Company, Los Angeles, California), the total Allied Health Professions Project was reviewed in order to bring the Advisory Committee up to date and to provide an analysis of progress in all facets of the Allied Health Projects, including the Secondary Schools Pilot Program.

Observations and opinions expressed at the meeting by the national leaders in the field of health care are presented below:

> This appears to be a good way to study not only the allied health professions but also other problems in the health-care industry.
>
> I have strong feelings about the secondary school program which has broad implications for meaningful health education, in potential health careers and in terms of wise personal use of health facilities.
>
> Dale Garell, M.D., Director
> Division of Adolescent Medicine
> Children's Hospital, Los Angeles

> We have been interested in the potential this project holds for the health-care industry.
>
> The bulk of the work done in hospitals and other institutions is of a technical nature, and we believe that the AHPP material will be extremely valuable in preparing junior college and secondary school personnel for work in the health-care field.
>
> L.M. Detmer, Assistant Director
> Bureau of Health Manpower
> American Hospital Association

These instructional units will give the employer in industry a much higher degree of ability to prepare people to perform given tasks, in a wider variety of ways, and enlarge our potential for the economic use of manpower.

Philip Williams, Chairman
AHPP National Advisory Committee, and
Vice President, Times-Mirror Company
Los Angeles, California

The gap between research and implementation has been bridged by the Secondary Schools Project.

We are excited by the potential of the Secondary Schools program, and we are anxious to adopt the program in our district.

Cecil Briscoe
High School Administrator
Bakersfield, California

I am impressed with the program. It is one which all of the people of the United States are looking for.

Young people in secondary schools have an opportunity to experience a curriculum in health care. The average young person doesn't know the difference between an occupational therapist and a physical therapist, and probably a good many adults don't either.

Another thing this program has demonstrated is that relevant allied health instructional material can be packaged for use in a variety of places around the nation. The average school administrator will need the results of the secondary schools demonstration program in order to develop similar programs.

Levitte Mendel, Associate Director
National Health Council

This is an outstanding project and is conducted at a much higher level of technical proficiency and methodology than is usually the case for most curriculum projects.

There is a tremendous need for instructional material for community colleges in the allied health fields; this project is pioneering in the development of such material.

This project, and others, are cutting down the ten-year lag between the needs of society and the actual product (students) turned out by educational institutions.

Arthur Nelson, President
Technical Education Research Center

Traditional curriculums are giving way to the new approaches used by this exciting project. In ten years the delivery of health care will depend in a very large measure upon allied health personnel.

Edward Furstman, D.D.S.
Council on Dental Education
American Dental Association

I am impressed with the scope and depth of this remarkable project. . . . The Secondary Schools Project has a program with two major outcomes – an occupational preparation phase, and a phase related to intelligent health care consumers. An outgrowth of contemporary conditions has produced a home health care group which needs instruction such as is being devised by this project. . . . The career lattice potential of this program is excellent.

James Ensign, Vice President
Professional Relations
Blue Cross Association

I am impressed; this is one of the better projects I have seen. . . . In task analysis, we must be concerned with the basic tasks to be performed and with the general education development required to perform the task.

Leon Lewis, Chief
Division of Occupational Analysis
and Employer Services
U.S. Department of Labor

As a hospital administrator, I am most anxious to see this program move into both the teaching hospital and the community hospital. The real worth of this project will be exemplified when we can put the results to work.

Bernard Strohm, Assistant Director
UCLA Hospitals and Clinics
UCLA Health Sciences Center

This project is directed toward the future which has extensive growth and training requirements for allied health. . . . Practicing physicians are talking with great conviction and with strong feelings about the importance of allied health occupations; practicing physicians really like allied health workers.

Ralph Kuhli, M.D., Director
Department of Allied Medical
Professions and Services
Division of Medical Education
American Medical Association

We have particular interest in the Secondary Schools program because people coming into military service can pick their particular fields in the allied health occupations, and they often make the wrong choices and drop out. If they had some background of knowledge, they could make sounder choices.

Col. Richard T. Weatherall, M.S.C.
Director of Enlisted Training
Office of the Surgeon General
Department of the Army, U.S.A.

This looks like a blue chip project, and I'll do anything I can to help keep you on your course.

Dr. William Samuels, Jr., Executive
Director
Association of Schools of Allied
Health Professions

The wealth of background information gathered in this project will never be lost even if it is not used immediately. I think the investment of time and effort and funds have all been productive, and the results should and will be utilized.

What is being developed here has strong implications for across-the-board development in the allied health occupations. . . . Find better and more efficient ways of teaching people and teaching them according to specified objectives cannot help but reduce unnecessary motion, poor teaching, and ineffective use of materials. There is a cost factor implied, and perhaps we cannot demonstrate it, but the implication of economy in costs cannot be overlooked.

I shall do everything I can do specifically to maintain an interest in this project and to further it. I think it is making a great contribution in allied health education.

Dr. Joseph Kadish, Education Specialist
Division of Allied Health Manpower
Dept. of Health, Education, and Welfare

You have developed a pattern that might be implemented in fields other than the health areas – even in such a field as engineering – so that a secondary school student might have a better chance to observe various occupational areas, utilizing your model, and make a better career decision when he gets to college.

Dr. William Shannon, Acting Associate
Executive Director
American Association of Junior Colleges

We at the Office of Education support this project financially, but even more significant, we support it philosophically. . . . There is intense interest (in the project). In the month of November alone we received over 150 written requests for information about the Secondary Schools program, and though December requests have not yet been tallied, they must be at least as numerous. This tally does not include telephone requests and people dropping in to ask for information. The secondary schools needed your information last year and perhaps even ten years ago.

I am overwhelmed with the scope of the project, with the undertaking of such a wide range of programs, and the thoroughness with which you have been working. . . . I am concerned with what happens to all this fine work if and when UCLA completes its participation, and would like to know what "handles" you will provide so that others can pick up and go on with this work.

Helen K. Powers, Program Officer
Health Occupations
Office of Education
Dept. of Health, Education, and Welfare

I am extremely impressed, as everyone here is, especially with the Secondary Schools Pilot Project. . . . A most valuable modification of the secondary schools approach in your pre-employment program could make it available to the hard-core unemployed, the disadvantaged, the welfare recipients who must find employment under the new Family Assistance Program. If such a modification could be

found, we at Social and Rehabilitation Service might be able to extend support to the ongoing products of the program at UCLA.

This program provides ways in which people can be trained outside of the standard conventional setting, but in a work situation; on the job, where you can take advantage of the special skills that are available there.

This project presents a medium for implementation of work-incentive programs, where dropouts or persons unable or without incentive to go back into traditional educational programs can enroll in a meaningful training program with early opportunity for gainful employment.

Joseph E. Traub, Consultant
Prosthetics and Orthotics
Social and Rehabilitation Service
Dept. of Health, Education, and Welfare

The Secondary Schools program is of particular interest to many people because of its career orientation aspects; all of our efforts to try to direct people into various occupations will fail unless these people can be helped at an early age to recognize available career opportunities. The technique used here will have application to the broad spectrum of occupational education.

We have to identify jobs and training for people with little or no education and develop ways to utilize them in our manpower and take them off the welfare rolls. I have been hoping that this project would relate itself to that particular problem because it is needed there.

Lowell Burkett, Executive Secretary
American Vocational Association

The next step – implementation – calls for involvement of the schools, not just community colleges and not just high schools. I'm talking about adult schools, the continuation schools, the area schools, the private schools, and other private sectors getting into training. . . . Once involvement has been achieved, it's never going to be any better than the teachers providing the instruction. You may have to get the best qualified individual to teach the content of a module, and then work with that teacher to help him do a better job of teaching it.

I would like to have the materials developed here used in the 385 high school districts in the State of California where there is such interest as Mr. Briscoe expressed in the Secondary Schools program.

Richard S. Nelson, Chief
Bureau of Industrial Education
California State Dept. of Education

There is tremendous support for this project at the Office of Education Comprehensive and Vocational Research. . . . One concern of the people on our staff is the total task of curriculum development. We should welcome a record or bulletin on your procedures in curriculum development that resulted in the materials shown here, and especially the things that worked well, the procedures that are transferable, the problems encountered and how they were dealt with. This could be especially helpful.

Dr. Elizabeth Simpson, AHPP Grant Officer
Instructional Materials and Practices
Division of Comprehensive and Vocational Education Research
Office of Education
Dept. of Health, Education, and Welfare

STUDENT PROGRESS TOWARD ACHIEVEMENT OF THE PERFORMANCE OBJECTIVES OF THE PROGRAM

In this section of the report, data regarding student progress toward achievement of the performance objectives of the Secondary Schools Pilot Project are presented under the following headings:

1. Students' self-evaluation of progress
2. Parents' evaluation of students' progress
3. Evidence of progress toward achieving vocational maturity
4. Evidence of progress in developing skills and behaviors essential to working in the health-care system

5. Evidence of progress in becoming a knowledgeable consumer of health-care services

Students' Self-Evaluation of Progress

One important measure of students' progress may be found in their own self-assessments of achievement, and so such assessments were obtained for each of the following performance objectives of the project:

Ability to tell what workers do in several allied health occupations

Ability to explain steps necessary to enter an allied health job

Ability to make a wise vocational choice

Demonstration of knowledge about how health-care facilities operate

Ability to perform basic skills in selected allied health occupations

Ability to identify and describe the functions of specific equipment used in the health-care system

Demonstration of behavior appropriate to the world of work (dependability, attendance, personal appearance, etc.)

Ability to maintain own health through the use of appropriate health care

Ability to refer family and friends to appropriate health-care facilities

Students were asked to evaluate their progress toward the achievement of each of the objectives by checking any one of the following responses:

None
Little
Quite a bit
Much
Don't know

As had been the case at the conclusion of Phase I of the program, so again at the conclusion of Phase II of the program, the mean evaluation given by the students to each of the

performance objectives was that *quite a bit* of progress had been made in the achievement thereof.

The rank order of the objectives in terms of the students' opinions regarding their progress in achieving them in shown in Table XII for both Phase I and Phase II of the project. It may be noted in the table that the students ranked the following objectives as being the ones on which they had made greatest progress during Phase II of the project:

Demonstration of knowledge about how health-care facilities operate
Ability to tell what workers do in several allied health occupations
Ability to perform basic skills in selected allied health occupations
Ability to explain steps necessary to enter an allied health job

During Phase I of the project, the students had ranked the following objectives as being the ones on which they had made greatest progress:

Demonstration of knowledge about how health-care facilities operate
Ability to tell what workers do in several allied health occupations
Ability to perform basic skills in selected allied health occupations
Ability to make a wise vocational choice
Demonstration of behavior appropriate to the world of work

Parents' Evaluation of Students' Progress

Parents of students participating in Phase II of the project were asked to assess their children's progress toward achieving the performance objectives. For each of the objectives, they were requested to check one of the following evaluative comments regarding such progress:

None
Little
Quite a bit
Much
Don't know

Table XII

Rank Order of Performance Objectives in Terms of Students' Opinions Regarding Their Progress in Achieving Them*

Performance Objectives	Rank Order	
	Phase I	Phase II
Ability to tell what workers do in several allied health occupations	2.5	2
Ability to explain steps necessary to enter an allied health job	8.5	4
Ability to make a wise vocational choice	4.5	7
Demonstration of knowledge about how health-care facilities operate	1	1
Ability to perform basic skills in selected allied health occupations	2.5	3
Ability to identify and describe the functions of specific equipment used in the health-care system	8.5	8
Demonstration of behavior appropriate to the world of work (dependability, attendance, personal appearance, etc.)	4.5	9
Ability to maintain own health through the use of appropriate health care	7	6
Ability to refer family and friends to appropriate health-care facilities	6	5

*Students expressed the opinion that they had made *quite a bit of progress* toward the achievement of *each* of these objectives during Phase I and again during Phase II. The rank order presented in this table must be interpreted within that context.

As had been the case with regard to Phase I of the project, tabulation of the parents' responses indicated that their mean evaluation of progress made by their children on every one of the objectives during Phase II was *quite a bit*. Table XIII shows the rank order of the objectives in terms of the parents' opinions regarding their children's progress in achieving them during Phase I and during Phase II of the program.

It is apparent from the rankings shown in the following table that parents believed that Phase I contributed most to their children's progress on these personal-family-consumer-health objectives:

Ability to maintain own health through the use of appropriate health care
Ability to refer family and friends to appropriate health-care facilities

As well might be expected because of the nature of Phase II of the program, parents believed that this part of the project contributed most to their children's progress on these vocational health objectives:

Ability to tell what workers do in several allied health occupations
Ability to make a wise vocational choice

In addition to the aforementioned written assessments of the program, oral assessments were also obtained from parents. The latter assessments were obtained in a series of conferences held by project staff members with parents at each of the four high schools involved in the program. Typical quotations from secretarial records of these conferences are presented below to indicate parental reaction to the program:

> Mrs. H. stated that the program is beautiful. She said that it has helped her daughter to decide on an area to train in. At the beginning she thought that it would just be classes, but it has turned out to be more than she expected. She thinks her daughter is doing beautifully.

> Mrs. O. said that her daughter would stay in the program even if the stipend were ended.

Table XIII

Rank Order of Performance Objectives in Terms of Parents' Opinions Regarding Their Children's Progress in Achieving Them*

Performance Objectives	Rank Order	
	Phase I	Phase II
Ability to tell what workers do in several allied health occupations	8	1
Ability to explain steps necessary to enter an allied health job	8	7
Ability to make a wise vocational choice	8	2
Demonstration of knowledge about how health-care facilities operate	5	8.5
Ability to perform basic skills in selected allied health occupations	4	4.5
Ability to identify and describe the functions of specific equipment used in the health-care system	6	8.5
Demonstration of behavior appropriate to the world of work (dependability, attendance, personal appearance, etc.)	3	4.5
Ability to maintain own health through the use of appropriate health care	1	4.5
Ability to refer family and friends to appropriate health-care facilities	2	4.5

*Parents expressed the opinion that their children had made *quite a bit of progress* toward the achievement of *each* of these objectives during both Phase I and Phase II of the program. The rank order presented in this table must be interpreted within this context.

Mrs. G. said that this is a good program. It lets the students know what working is all about – not only earning money but learning the value of work. She thinks the program has settled her son down a little.

Mrs. F. thinks the program has really taught the value of money. Her son had thought it grew on trees.

Mrs. H. feels that the money helps to motivate the students and give them a greater desire to work but that if the stipend ended, her daughter would stay in the program.

Mrs. L. said that the experience has been very helpful to her son and that if the small stipend stopped, he would not. He genuinely likes what he is doing; he even works weekends and holidays.

Mrs. B. said that the program is excellent, because it has made several changes in her son. He now has more interest in school and does his homework after he comes home from the hospital instead of running the streets. As a result of this, his grades have improved.

Evidence of Progress Toward Achieving Vocational Maturity

As stated at the beginning of this report, one of the four major objectives of the Secondary Schools Project was the following: The student will be prepared to make an appropriate career choice of an allied health occupation. Progress during the first year of the project toward the achievement of this goal was to include growth in these abilities:

1. To describe job tasks in several allied health occupations
2. To list the educational and training requirements for the occupations
3. To describe the career ladder associated with each occupation, including entry and advanced positions
4. To describe worker characteristics needed in various positions

On three occasions during the year, AHPP students were given a form on which to state their occupational choices and to list the steps they would have to take to enter them. Through the use of these forms and personal interviews, it was found that by the end of the

year, 80 percent of the students were able to specify a health occupation that they would be interested in entering and to describe steps required to enter the occupation. Reasons given for selecting an occupation became appreciably more realistic as the program progressed. This increased maturity was especially marked after the students had completed the month-long work experience in a hospital.

Only 16 percent of the students in the project were still undecided at the end of the first year as to what occupation to select from among the several that interested them. Another 4 percent of the students made tentative choices of occupations that were not related to the health field.

The experience which the students had in the hospitals appeared to exert the greatest influence on their career choices. After working in each of four kinds of health occupations (one week in each occupation), the student was asked to evaluate his experience, and the hospital supervisors of his work were asked to evaluate his performance. A close relationship was found between student and supervisor ratings, and an equally close relationship was found between both of these ratings and the student's occupational choices.

Another instrument used to gain evidence of vocational maturation by participants in the project was a test designed by the research team entitled "Knowing About Jobs." The test, given at the conclusion of the first year of the project, was designed to help determine the following student abilities:

To match occupational titles with descriptions of job functions
To demonstrate an understanding of the career ladder concept
To identify occupational clusters

The percentages of correct responses made by the AHPP students to the items in the three parts of the test (corresponding with the kinds of abilities listed above) are given as follows:

Part I: 78.96 percent

Part II: 64.02 percent

Part III: 46.69 percent

Since the abilities tested in Parts II and III were not specifically stressed in Phase I of the project, it was not surprising to find that the students scored lower on items in these parts of the test than they did on items in Part I.

During the second year of the program, additional evidence of student progress in achieving vocational maturity was gained through the use of the *Vocational Development Inventory*, a fifty-item attitude scale developed by John O. Crites at the University of Iowa. The scale consists of statements about an adolescent's (1) involvement in the process of vocational choice, (2) orientation toward the problem of vocational choice, (3) independence in decision making, (4) preference for factors in vocational choice, and (5) conceptions of vocational choice. Internal reliability and external validity of the scale have been well established.

This attitude scale was administered as a pretest and as a post-test to forty-five of the sixty-six students in Phase II of the project. As indicated in Table XIV, a comparison of the pretest scores with the post-test scores reveals that the students made statistically significant gains between the beginning and the conclusion of Phase II. Since these attitudinal gains were greater than might be expected solely as the result of the students' maturation in age, it is reasonable to conclude that the work experiences in Phase II contributed substantially to the students' growth in vocational maturity.

Table XIV

Comparison of Pretest Scores With Post-Test Scores on the *Vocational Development Inventory*

	Pretest Scores	Post-Test Scores	N	t
Sum	1519.00	1574.00	45	
Mean	33.75	34.98	45	2.14*

*$p \leq 0.05$, 44 df

As had been the case during the first year of the program, further evidence of the students' growth in vocational maturity during the second year was gained from the use of forms requesting students to write down their occupational plans and to list the steps they would have to take to enter the occupation of their choice. This was done three times during the year, and on each successive occasion definite growth was shown in the maturity and realism of occupational plans. At the end of the second year, it was found that 100 percent of the students who intended to continue participation in the project wished to be placed, during Phase III, in work assignments which were similar to the ones they had experienced during Phase II. Furthermore, 77 percent of the students predicted that they would desire to continue in the same kind of work after they completed the total program in 1973.

Evidence of Progress in Developing Skills and Behaviors Essential to Working in the Health-Care System

Since one of the major objectives of the Secondary Schools Project was to help students gain the ability to function satisfactorily as an employee in the health-care system, it was essential to evaluate their progress in developing behaviors which are appropriate to the

world of work. The chief means of evaluating this progress was through the use of a performance appraisal form. The form, designed by the research team, was used by supervising personnel in the cooperating hospitals for rating AHPP students.

Performance factors which were evaluated by the hospital supervisors, together with rating scores for each kind of evaluation, are listed below:

Quality of work	Unsatisfactory	= 0
	Satisfactory	= 5
	Above average	= 10
Quantity of work	Substandard	= 0
	Average	= 5
	High	= 10
Potential	Doubtful	= 0
	Promising	= 5
	Above average	= 10
Attitude	Indifferent	= 0
	Normal interest	= 5
	Enthusiastic	= 10
Cooperation with others	Antagonistic	= 0
	Satisfactory	= 5
	Supportive	= 10
Job skill	Low	= 0
	Adequate	= 5
	Good	= 10
Initiative	Needs prodding	= 0
	Does assigned work well	= 5
	Seeks tasks to be done	= 10
Appearance	Must improve	= 0
	Satisfactory	= 5
	Outstanding	= 10

Records of student attendance while participating in the four-week hospital experience during the first year of the program were also kept by the hospital supervisors. These records showed that during the first week the average attendance was 4.6 days out of 5; and during the fourth week it was 4.8 days out of 5.

The performance appraisal forms were filled out by hospital supervisors at the conclusion of each of the four weeks during which the students were employed. In Table XV are shown the average scores given to the students at the conclusion of the first week and at the conclusion of the fourth week.

Table XV

Hospital Supervisors' Appraisal of Students' Work Performance

Factor Appraised	Mean Rating First Week (From 0 to 10)	Mean Rating Fourth Week (From 0 to 10)
Job skill	6.7	8.0
Attitude	7.0	7.9
Cooperation with others	7.5	7.4
Initiative	7.2	7.0
Quantity of work	6.1	6.7
Potential	5.9	6.7
Quality of work	6.5	6.3
Appearance	6.1	5.8

As is indicated in the table, evaluations given at the end of the first week were above "5" for every factor. Highest evaluations at that time were given to "cooperation," "initiative," and "attitude." At the end of the four-week experience in the hospital, the students

were again given ratings of above "5" on all factors. Highest ratings at the conclusion of the experience were given to "job skills," "attitude," and "cooperation." Greatest improvement in student performance was shown in "job skills," "attitude," "potential," and "quantity of work."

On the basis of the ratings given by the hospital supervisors, it may be concluded that by the end of Phase I of the project AHPP students were doing health-care work of satisfactory quality and quantity; were showing normal interest in the work and a promising potential for further success in it; were doing assigned work well, with good job skills; were cooperating satisfactorily with others; and were satisfactory in appearance and in attendance.

During the second year of the program, additional evidence of student progress in developing skills and behaviors essential to working in the health-care system was gained from the analysis of the ratings of the students given by their hospital supervisors. These ratings during Phase II of the program were given at the conclusion of each month on a form designed for that purpose. The form provided the supervisors a means for evaluating student growth in attendance, dependability, initiative, job competence, progress on job, relation with others, and appearance. Ratings used by the supervisors ranged from "unsatisfactory" to "excellent."

In Table XVI are shown the supervisors' ratings of the students at the conclusion of the first semester of Phase II and at the conclusion of the second semester of Phase II. On the basis of the hospital supervisors' evaluations reported in this table, the following observations may be made:

1. In each of the behavioral characteristics rated by hospital supervisors, students showed improvement during Phase II of the project.
2. Greatest improvement by the students was made in relations with others, job competence, appearance, and initiative.

3. Least improvement and lowest ratings were made in student attendance and dependability, but in even these characteristics mean ratings of "low average" were given.

Table XVI

Hospital Supervisors' Ratings of Student Progress During Phase II

Behavioral Characteristics	Mean Ratings*	
	End of 1st Semester	End of Year
Attendance	2.0	2.1
Dependability	2.2	2.3
Initiative	2.3	2.4
Job competence	2.3	2.6
Progress on job	2.4	2.5
Relations with others	2.5	3.0
Appearance	2.5	2.8

*Excellent = 4
Above average = 3
Average = 2
Needs to improve = 1
Unsatisfactory = 0

Evidence of Progress in Becoming a Knowledgeable Consumer of Health-Care Services

As was pointed out earlier in this report, parents of the students who participated in the Secondary Schools Project said that their children had made greatest progress during Phase I of the program in the achievement of the following project objectives:

Ability to maintain own health through the use of appropriate health care
Ability to refer family and friends to appropriate health-care facilities

Clearly, the parents were very favorably impressed throughout the project with the students' growth as knowledgeable consumers of health-care services. The students themselves also believed that during each year of the program they had progressed "quite a bit" along this line.

To supplement the above opinions, use was made by the evaluation team of the standardized *Health Behavior Inventory*, devised by E. Harold Le Maistre and Marion B. Pollock (published by CTB/McGraw-Hill). This instrument is a multiple-choice test which presents the student with health problems which are frequently encountered at the senior high school level, and the student is instructed to select the best one of five answers for each of seventy-five items. The test items fall under the following headings: Personal Health – 12 items; Safety and First Aid – 9 items; Family Health – 9 items; Infection and Disease – 8 items; Nutrition – 6 items; Community Health – 11 items; Exercise, Rest, and Recreation – 7 items; Drinking, Smoking, and Narcotics – 6 items; and Dental Health – 4 items.

This test was administered at the end of Phase I of the project to determine how tenth-grade student participants in the AHPP program compared with a control group in consumer knowledge of health care. The control group was made up of students who were enrolled in a regular course entitled Health Science, which was also offered in the tenth grade.

Results of the test showed that the students who had participated in AHPP checked correct answers to an average of 52.8 percent of the health problems, whereas students in the control group checked correct answers to an average of 36.1 percent of the health problems.

CONTRIBUTIONS OF THE PROJECT TO THE EXTENSION AND IMPLEMENTATION OF HEALTH CAREER PROGRAMS IN SECONDARY SCHOOLS

As the program described in this report gained national attention as an effective means of providing a flexible curriculum to prepare high school students for careers in the field of health services, the Bureau of Industrial Education of the California State Department of Education recognized that many aspects of the program might be utilized in a statewide effort to promote health career education in the secondary schools of California. Accordingly, the Bureau of Industrial Education developed a Careers in Health Services Program.

The basic purpose of this program was to promote health career education in the secondary schools throughout California and to develop strategies for accelerating changes that would result in potential upward mobility for students as they become aware of the many careers awaiting them in the health-care field. Among the major purposes of the program were the following:

To survey existing health career programs for baseline information

To provide preservice and inservice training for health and education personnel

To extend health career education throughout California

To establish an articulation program between the secondary schools and the community colleges

Extension of Health Career Programs

That efforts to promote health career programs in secondary schools of California were successful was clearly evidenced by the fact that new programs were developed during 1972 and 1973 in the following school districts:

1. Riverside Unified School District, Riverside
2. Venice High School, Los Angeles City School District
3. Jefferson Union High School District, Daly City

4. San Mateo Union High School District, San Mateo
5. Coachella Valley Joint Union High School District, Coachella
6. Corona-Norco Unified School District, Corona
7. Fresno School District, Fresno
8. Central Union High School District, El Centro
9. Chico Unified School District, Chico
10. Clovis Unified School District, Clovis
11. Grossmont Union High School District, La Mesa
12. Kern Joint High School District, Bakersfield
13. New Haven Unified School District, Union City
14. Rialto Unified School District, Rialto
15. Beverly Hills School District, Beverly Hills

Titles, purposes, and plans of some of the programs listed above were briefly outlined as follows:

COASTAL REGION

Jefferson Union – September, 1972

Program: Health Careers Training Program

Purpose: To provide comprehensive exploration and preparation in the total area of Health Education.

Plan: Three-year program, twenty-five 10th-grade boys and girls each semester. Nine-week summer hospital internship for a teacher and two students.

First Year – Introduction to Allied Health, four-week hospital experience at end of semester.

Second Year – Work experience assignments

Third Year – Cooperative Education Plan

New Haven Unified – March, 1972

Program: Health Careers Training

Purpose: To provide comprehensive exploration and preparation in the total area of Health Education.

Plan: Three-year program, twenty-five 10th-grade boys and girls each year. Nine-week summer internship program for teachers and four 12th-grade students.

First Year – Introduction to Allied Health (two hours daily), four-week hospital experience at end of semester.

Second Year – Work experience assignments

Third Year – Cooperative Education Plan

San Mateo Union – September, 1972

Program: Health Careers Training

Purpose: To provide comprehensive exploration and preparation in the total area of Health Education.

Plan: Three year program, seventy-five 10th-grade boys and girls each year. Each class will consist of 25 students. Nine-week summer internship program for teachers and up to six students.

First Year – Introduction to Allied Health (two hours daily), four-week hospital experience at end of semester.

Second Year – Work experience assignments

Third Year – Cooperative Education Plan

CENTRAL REGION

Chico Unified – January 31, 1972

Program: Nurse's Aide/Orderly

Purpose: To provide training and instruction leading to employment as a nurse's aide or hospital orderly.

Plan: One-semester course (18 weeks). Meets one hour daily, five days a week for a total of 95 hours; 60 nours will be spent in the classroom and 30 working in a hospital receiving on-the-job training.

Twenty-five junior or senior students per semester from all three district high schools. All ethnic backgrounds and not limited by sex or school or regular attendance. Class taught after close of normal school classes. Teaching team consists of a homemaking teacher and a registered school nurse.

Fresno Unified – November, 1971

Program: Allied Health Careers Training

Purpose: To provide comprehensive exploration and preparation in the total area of Health Careers.

Plan: Three-year program, summer internship program will be offered instructors and student teacher aides for seven weeks, four hours daily. Twenty-five 10th-grade boys and girls each year.

First Year – Two-hour daily block of time, four-week hospital experience at end of semester.

Second Year – Work experience assignments

Third Year – Cooperative Education Plan. A one-hour-per-week related learning activity will be provided.

Kern Joint Union – January 1, 1972

Program: Allied Health Project

Purpose: To provide comprehensive exploration and preparation in the total area of Health Education.

Plan: Three-year program enrolling 100 secondary-level boys and girls each year in four classes. Nine-week summer internship program for teachers and four 12th-grade students.

First Year – Introduction to Allied Health

Second Year – Work experience assignments

Third Year – Cooperative Education Plan

SOUTHERN REGION

Coachella Valley Joint Union – September, 1972

Program: Law Enforcement and Health

Purpose: To provide new instructional and vocational experience opportunities to students in the areas of law enforcement and the paramedical professions.

Plan: Total of 86 students, 11th- and 12th-grade male and female, 80 percent Mexican-American, 12 percent Caucasians, 8 percent Negros. On-site visitations to community health facilities. Classroom instruction.

First Semester – 22 Law Enforcement, 20 Paramedical

Second Semester – 24 Law Enforcement, 20 Paramedical

Placement in a daily on-site occupational experience position for a minimum of a four-week period. Cooperative vocational education program. Articulation of the two vocational sequences with existing programs operated by the college.

Corona-Norco Unified – September, 1972

Program: Health Careers Program

Purpose: To provide comprehensive exploration and preparation in the total area of Health Education.

Plan: Two-year program, twenty-five 11th-grade boys and girls, summer internship program to provide hospital work experience for project teacher/coordinator.

First Year – (12th graders may be included) One-half school year, four-week period of hospital experience at end of semester, two-hour daily block throughout.

Second Year – Work experience assignments

Third Year – Cooperative Education Plan

Grossmont Union – January 31 and June 26, 1972

Program: Orderly Education Instruction Project

Purpose: To train male high school students as hospital orderlies for gainful employment in a recognized occupation upon high school graduation.

Plan: Twenty students per section, 40 maximum.

Section One – January 31, 1972, to June 23, 1972
360 hours, three days a week, Monday, Wednesday and Friday, three hours 6-9 p.m.), Saturday for 8 hours (7 a.m. to 3 p.m.).

Section Two – June 26, 1972, to August 25, 1972
360 hours, five days a week, Monday through Friday, eight hours daily for nine weeks. Program concluded.

Imperial Valley Unified – September, 1972

Program: Allied Health Careers

Purpose: To provide comprehensive exploration and preparation in the total area of Health Careers.

Plan: Three-year program, twenty-five 10th-grade boys and girls each semester, now in second phase. Two-hour daily block of time, five days a week.

First Year – Introduction to the Allied Health field

Second Year – Work experience assignment

Third Year – Cooperative Education Plan

Rialto Unified – Spring, 1972

Program: Health Occupations

Purpose: To open the broad area of health occupations to students who are not now aware of the opportunities in this field and who have not been actively involved in a vocational education program.

Plan: Started January 1, 1972, program will conclude December 31, 1972. Simulated classroom instruction portion of the program, two hours daily during summer of 1972 for seven weeks. Second semester of 1971-1972 school year, 25 students enrolled in on-site program. Fifty students involved in the two summer classes for 60 hours. Fifty students in the fall of 1972-73 school, 36 hours classroom instruction. Male and female enrollees from grades 10 through 12, with the hospital on-site program limited to 11th- and 12th-grade students, 144 hours of on-site experience.

Preservice Education Programs

Because interest in secondary school health career programs resulted in the initiation of numerous new ones throughout California, it became necessary to provide an extensive education program for all personnel who would be involved in them. Under a grant from the Bureau of Industrial Education of the California State Department of Education, three kinds of sessions for that purpose were arranged: (1) Orientation Sessions for Administrators,

(2) Health Careers Teacher Training Institutes, and (3) Clinical Instructor Training Sessions. The meetings for administrators were one day in length and included school superintendents, principals, directors, supervisors, hospital administrators, and community leaders. The teacher training institutes were three-day sessions in which the teachers were instructed in how to organize and operate a secondary school health occupations program. Clinical instructor training sessions, designed for hospital personnel who would be involved in on-the-job instruction of students during their work in the hospitals, were also three days in length.

Between April 5, 1972, and February 23, 1973, twenty-two preservice education programs, staffed primarily by leadership personnel of the UCLA Secondary Schools Allied Health Professions Project, were offered in 18 locations to 504 participants. A summarizing report regarding the preservice education programs included the following points:

1. The Preservice Education Program was developed as a means for extending the Secondary School Allied Program by placing special emphasis on preparing teachers and other program personnel for Allied Health Programs throughout California. By demonstration, observation and "learning by doing," the participants in the 22 sessions found out how to adapt the instructional materials to their own school districts and how to implement the program.

2. Over 75 percent of the participants were employed by school districts. The most numerous, occupationally, were teachers, followed by nurses and coordinators.

3. Participants were taught a total of 20 basic entry-level tasks, including: handwashing, taking vital signs, body mechanics, positioning patients, urinalysis, streaking a plate, and assembling medical records.

4. Hospital personnel were selected to do the task instruction and were from the Physical Therapy, Occupational Therapy, Nursing Services, Medical Laboratory, Medical Records, Anesthesiology, and Radiology Departments. The one exception was a First Aid Instructor provided by the Red Cross.

5. There was a total of 10 one-day workshops and 12 three-day workshops.

6. The geographical range of the workshops extended as far north as Crescent City and as far south as Imperial Beach. Each Vocational Education Region was represented.

7. The workshop staff was composed of the Acting Director of the UCLA Allied Health Professions Projects, a Health Occupations Specialist for the California Department of Education, a Program Curriculum Specialist, the Deputy Director of the Secondary Schools Program Field Coordinator, and a two-person evaluation team. Secretarial support was provided at each workshop.

8. The response of the participants throughout the entire series was overwhelmingly positive.

Preparation of Publications

Since the UCLA Secondary Schools Project for an Introduction to the Allied Health Professions was a *pilot* and *demonstration* project, it was essential that in the course of that project there be developed and published materials which would be useful not only in the pilot project itself but also in other similar projects which might be modeled after it. Among the publications which were generated and produced by the pilot project in response to this need were the following:

Program Guide – A Guide for Development and Operation of a Secondary School Allied Health Program, September, 1972, pp. xv + 143. This monograph, written by Jerome Epstein, M.A., includes chapters on the following subjects: Preparation, Setting Up the Program in the Hospital, Recruiting and Selecting Students, Phase I (of the program), Phase II, Phase III and Followup.

Introduction to Allied Health Careers – Teacher's Manual, November, 1971, Revised March, 1972, pp. xvi + 564. This manual was written by Doris Rosenthal, M.A., M.P.H., and Phyllis Agran, M.A., M.P.H. The comprehensive coverage of the manual is indicated in its table of contents, which follows:

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Introduction to Allied Health Careers – Student's Manual, November, 1971, pp. v + 269. This manual was also written by Doris Rosenthal, M.A., M.P.H., and Phyllis Agran, M.A., M.P.H. The table of contents of this manual, designed for student use particularly during Phase I of the program, is as follows:

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Task Inventory and *Student Training Record Booklets*, 1972-1973, prepared by Miles H. Anderson, Ed.D., and staff. The *Task Inventory* includes a comprehensive listing of health facility tasks considered suitable for learning by high school students. The list includes tasks performed in twenty-three hospital and health-care facility departments. The *Student Training Record Booklets* were designed for use by students and their training supervisors in recording progress made by the students in the learning and mastering of the various tasks performed in specific departments. Such booklets were prepared for use in the following departments or health service roles:

Nursing
Central Service
Hospital Business Office
Physical Therapy Aide
Inhalation Therapy Aide
Personnel Training
Refrigeration and Air Conditioning
Pharmacy Technician
Occupational Therapy Aide
Social Worker Aide
Radiology Aide

Background, Program and Progress of the Secondary School Project, October, 1970, pp. v + 19. This report, written by Diane E. Watson, M.S., and others, briefly describes the nature and goals of the pilot and demonstration project and details initial plans for the three-year program, including its curriculum and evaluation.

Evaluative Report on Phase I of the Secondary Schools Project, August, 1971, pp. vii + 96. This report, written by Clarence Fielstra, Ph.D., and Barbara Rosenquist, Ph.D., is an evaluation of the first year of the project. Major headings under which the report was organized are the following: Background of the Project; Students Participating in the Project; Student Interest in Learning Experiences Offered; General Quality and Effectiveness of Project; Student Progress Toward Achievement of Performance Objectives; Summary of Findings, Conclusions, and Recommendations; and Appendices and Exhibits.

Evaluative Report on Phase II of the Secondary Schools Project, September, 1972, pp. vii + 106. This report was also written by Clarence Fielstra, Ph.D., and Barbara Rosenquist Chrispin, Ph.D. It is an evaluation of the second year of the project and its organization is similar to that of the first-year evaluative report.

Other materials produced by the staff of the Secondary Schools Project include the following:

A promotional booklet entitled *A New Source of Manpower*. This booklet, intended primarily for student use, describes how the allied health program came about and the way in which it works.

A promotional brochure entitled *A Rewarding Career Can Be Yours in the Allied Health Occupations*. This brochure was designed to accompany student application forms. It briefly describes how the program works, who qualifies for entry into the program, and employment opportunities in the health field.

A set of seventy-six 2-inch by 2-inch color slides, with an accompanying script and sound tape, designed for promotional and motivational purposes. These slides depict various stages of Phase I of the program and show students participating in various activities.

A set of eighty 2-inch by 2-inch color slides, designed to help students prepare for their initial hospital observation. The slides depict the development of the practice of medicine, outstanding medical scientists, several hospital departments and personnel, and various patient services.

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

In this monograph a summary evaluative report is made of the UCLA Secondary Schools Allied Health Pilot and Demonstration Project for the three-year period of its operation, 1970-1973. This culminating report supplements the 1971 *Evaluative Report on Phase I of the Secondary Schools Project* and the 1972 *Evaluative Report on Phase II of the Secondary Schools Project*.

Findings of the Study

The following are the most important findings of the study reported in this volume:

1. Initial applications for participation in the Secondary Schools Allied Health Pilot and Demonstration Project were made by 900 incoming tenth-grade students, and 100 students were selected.

2. Among the reasons given by students for wanting to participate in the project program, the following were the principal ones: specific interest in an allied health occupation (27 percent), general interest in career planning and decision making (21 percent), interest in helping people (16 percent), interest in getting a job and earning money (14 percent), and general interest in self-improvement (10 percent).

3. Composition of the initial project participants was as follows: 50 percent male, 50 percent female; 16 percent upper-ability level, 60 percent middle-ability level, and 24 percent lower-ability level; 62 percent Black, 21 percent Mexican-American, 5 percent Asiatic, and 12 percent White.

4. For the three years of the project, the average percentages of students belonging to the various ability levels were these: 13.7 percent higher-ability level, 63.7 middle-ability level, and 22.6 percent lower-ability level.

5. For the three years of the project, the average percentages of students belonging to various ethnic groups were these: 70.6 percent Black, 18.1 percent Mexican-American, 3.1 percent Asiatic, and 8.2 percent White.

6. Students in the project expressed varying degrees of positive interest in 17 out of 18 curriculum topics which were included in the program; most interest was expressed in the following: hospital experience, relationship of individual to community health and social problems, mental health and drug overdose, maternal and child care, and folk medicine and quackery.

7. Students in the project expressed varying degrees of positive interest in 36 out of 37 health-care tasks which were included in the program; most interest was expressed in the following: blood typing, taking and recording blood pressure with sphygmomanometer, listening to heart with stethoscope, and taking blood count.

8. Students in the project expressed varying degrees of positive interest in 22 out of 23 methods of learning used in the program; most interest was expressed in the following: taking field trips to health-care facilities; using films, slides, records, and other audiovisual materials; performing laboratory activities and hospital tasks in the classroom; working with "buddies"; and having classroom discussions and "rap" sessions.

9. In free-response comments concerning what they liked *best* about the program, students most frequently listed the following: learning technical skills and tasks; learning about health problems and concerns; having classroom "rap" sessions and discussions; having hospital experience and taking field trips; and role-playing, debating, and putting on skits and plays.

10. In free-response comments concerning what they liked *least* about the program, students most frequently listed the following: failure of health-care personnel to keep appointments; being ignored or unappreciated; having inadequate leadership; dealing with tasks that are too menial; and having to do too much writing.

11. Student work experiences during Phase II of the program were carried on in fifteen different hospital departments; largest numbers of students worked in these departments: nursing (23), X-ray (10), Clinical Laboratory (6), Physical Therapy (4), Pharmacy (3), and Social Work (3). As was true during Phase II of the program, so also during Phase III students showed greatest interest in working in the following hospital departments (in rank order of preference): (1) nursing, (2) X-ray, (3) clinical laboratory, and (4) physical therapy.

12. In oral comments regarding both Phase I and Phase II of the project, parents were strongly commendatory; and they expressed the opinion that even if no stipends for students were involved, their children would have been enthusiastic about the program.

13. In free-response comments concerning the program, national leaders in the field of health care were highly commendatory; and they expressed the hope that the pattern of the program might also be implemented in other fields.

14. The thirty-two hospital supervisors who were interviewed regarding their reactions to Phase II of the Secondary Schools Pilot Project expressed strong support of the program in general, but they suggested the following improvements: that they be given more orientation and inservice education relative to their roles in the project; that expectations and delimitations of the program be specifically detailed in a written policy statement; that lists of tasks to be learned by students be more definitely specified; that more background information about the students be provided to the hospital supervisors; that during Phase I of the project greater emphasis be placed on the students' development of attitudes and behaviors which are essential to the world of work, such as accountability, dependability, and good attendance; and that at all times greater communication be maintained between the project coordinator and hospital personnel.

15. Students in both Phase I and Phase II of the project rated their progress on each of the nine performance objectives as being "quite a bit" (next to the highest rating). The greatest improvement, from Phase I to Phase II, in the *rank order* of ratings of progress on these objectives was given to the "ability to explain steps necessary to enter an allied health job" (from 8.5 to 4).

16. Parents rated their children's progress during both Phase I and Phase II on each of the nine performance objectives as being "quite a bit" (next to the highest rating). The greatest improvement, from Phase I to Phase II, in the *rank order* of ratings of progress on these objectives was given to the "ability to tell what workers do in several allied health occupations" (from 8 to 1) and to the "ability to make a wise vocational choice" (from 8 to 2).

17. At the end of the first year of the project, 78.9 percent of the participants could match occupational titles with descriptions of job functions; 64 percent could demonstrate an understanding of the career ladder concept; and 46.6 percent could identify occupational clusters.

18. At the end of the first year of the project, 80 percent of the participants were able to specify a health occupation that they would be interested in entering.

19. At the end of the first year of the project, participants in the program checked correct answers to 52.8 percent of the health problems in the *Health Behavior Inventory*, whereas a control group of students who had taken the regular course entitled Health Science checked correct answers to 36.1 percent of the problems.

20. Between the beginning of Phase II and the end of Phase II, statistically significant gains were made by the students in their mean scores on the *Vocational Maturity Inventory* (a standardized attitude scale developed by John O. Crites).

21. At the conclusion of Phase II of the project, 100 percent of the students who planned to continue participation in the project during Phase III (in 1972-1973) expressed their interest in being given work assignments in the same hospital departments in which they had worked during Phase II; and 77 percent of the students predicted that they would desire to continue in the same kind of work after they completed the final phase of the project.

22. Hospital supervisors' ratings of seven behavioral characteristics of students during Phase II indicated that between the end of the first semester and the end of the year, students had improved in each one of the characteristics. Behavioral characteristics of students rated lowest (low average) by hospital supervisors during Phase II were "attendance" and "dependability." Behavioral characteristics of students rated highest (above average or high average) by hospital supervisors during Phase II were "relations with others," "appearance," and "job competence."

23. Grade-point averages of students who participated in the project improved from 2.4 in September, 1970, to 2.5 in June, 1972 (end of Phase II); grade-point averages of the control group of students (nonparticipants in program) declined from 2.5 in September, 1970, to 2.3 in June, 1972.

24. The percentage of students in the program who dropped out of school during the first two years of the project (Phase I and Phase II) was 2.6 percent; the percentage of students in the control group who dropped out of school during that period was 8.9 percent.

25. The percentage of students in the program who transferred to another school during the first two years of the project was 16.7; the percentage of students in the control group who transferred to another school during the same period was 34.2.

26. Health career programs, extensively modeled after the program of the UCLA Secondary Schools Pilot and Demonstration Project, were developed in fifteen additional schools throughout California during the second and third years of the UCLA project.

27. Twenty-two preservice education programs, staffed primarily by leadership personnel of the UCLA Secondary Schools Pilot and Demonstration Project, were offered during the second and third years of the UCLA project to 504 participants in eighteen locations throughout California.

28. For use in the pilot program itself and for subsequent use in programs modeled after it, six major publications, eleven student record training booklets, one-hundred and fifty-six 2-inch by 2-inch color slides, and several brochures were produced.

Conclusions

Based on the findings of this study, the following conclusions regarding the three-year UCLA Secondary Schools Pilot and Demonstration Project appear to be justified:

1. Progress toward achievement of each of these stated performance objectives of the project was made by student participants to a satisfactory extent or better:

   Ability to tell what workers do in several allied health occupations

   Ability to make a wise vocational choice

   Ability to explain steps necessary to enter an allied health job

   Demonstration of knowledge about how health-care facilities operate

   Ability to maintain own health through the use of appropriate health care

   Ability to refer family and friends to appropriate health-care facilities

   Ability to perform basic skills in selected allied health occupations

   Ability to identify and describe the functions of specific equipment used in the health-care system

   Demonstration of behavior appropriate to the world of work (dependability, attendance, personal appearance, etc.)

2. The wide variety of curriculum topics, health-care tasks, learning experiences, and teaching methods which were included in the program was amply justified by the equally wide variety of interests and abilities found on the part of students enrolled in the project.

3. Students who participated in the project program were appreciably less likely to drop out of school or to transfer to another school than were nonparticipants who were in a control group.

4. Higher grade-point averages were earned by participants in the program than by a control group of nonparticipants.

5. Enthusiasm regarding the nature and outcomes of the project program was widely expressed by student participants in the program, by their parents, by hospital personnel who supervised the students' work, and by national experts in the field of health care.

6. The UCLA Secondary Schools Demonstration and Pilot Project staff has been highly instrumental in the extension of health career programs to other high schools of California.

7. The UCLA Secondary Schools Demonstration and Pilot Project staff has successfully developed and inaugurated a preservice education program for personnel who may be involved in secondary school health career programs.

8. The UCLA Secondary Schools Demonstration and Pilot Project staff has produced guides, manuals, and numerous other materials which are of much value to personnel who model their health career programs after that of the UCLA project.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are made:

1. That the program of the UCLA Secondary Schools Demonstration and Pilot Project serve as a model for health career programs in high schools throughout the United States.

2. That the manuals, guides, student work record booklets, and other materials developed by the staff of the UCLA program serve as tools for personnel who plan to develop other health career programs.

3. That the preservice education programs developed by the staff of the UCLA project be recognized as potential models for use in initiating other secondary school health career programs.

4. That in the development and operation of health career programs for secondary school students, special care be taken during phases of the program involving school-hospital cooperation to assure the following conditions:

   (a) Criteria for assignments of students to work experiences in health-care facilities should be clearly specified. Among the criteria should be not only student interest but also student maturity, student need, job opportunities and job requirements.

   (b) Much emphasis should be placed on the orientation, preservice education, and inservice education of hospital personnel involved in the occupational training of students.

   (c) Close and continuous communication between the project staff and hospital personnel should be developed and maintained.

   (d) The occupational training experiences of students should be based on lists of tasks related to each of the health-care occupations to which the students are assigned.

   (e) Responsibilities and performance expectations of students, hospital supervisors, project coordinators, and all other personnel involved in the successful operation of the program should be clearly and specifically detailed.

5. That post-high-school followup studies, in terms of the objectives of the program, be made of students who have participated in health career programs at the secondary school level.

6. That the concepts and practices underlying the UCLA Secondary Schools Demonstration and Pilot Project relative to the establishment of close interrelationships between education and the world of work be experimentally applied to a number of other occupational fields in addition to that of health-care services.

APPENDICES

APPENDIX A

EXAMPLE OF A TRAINING INSTITUTE PROGRAM

PRESERVICE TRAINING INSTITUTE FOR

SECONDARY SCHOOLS ALLIED HEALTH INSTRUCTORS

August 1, 2, and 3, 1972

UNIVERSITY OF CALIFORNIA, LOS ANGELES
Division of Vocational Education
Allied Health Professions Project
Secondary Schools Program

In cooperation with

CALIFORNIA STATE DEPARTMENT OF EDUCATION
Bureau of Industrial Education and Professional
Development Program Services Unit

and

ST. JOHN'S HOSPITAL
Santa Monica, California

This program funded through Grant No. 19-30049-EF073-73 from the United States Office of Education, Educational Professional Development Administration, and the Professional Development Program Services Unit, Vocational Education Section, California State Department of Education

PRESERVICE TRAINING INSTITUTE FOR SECONDARY SCHOOLS
ALLIED HEALTH INSTRUCTORS

Tuesday, August 1, 1972

7:45 a.m.	Pickup – front of Miramar Hotel
8:00-8:30	*Orientation* – St. John's Hospital, Inservice Training Room C and D
	Greetings and Introductions – Dr. Melvin L. Barlow, Director, Division of Vocational Education
	Brief Report on California's Careers in Health Services Programs – Diane E. Watson, Specialist, Health Occupations, Bureau of Industrial Education
	Institute Purpose and Objectives – Dr. Miles Anderson, Acting Director, Allied Health Professions Project
8:30-9:30	*Presentation* – Jerome Epstein, Curriculum Specialist, Secondary Schools Pilot and Demonstration Project
	First-Year Introduction to Allied Health Careers Curriculum Sample Case II – Broken Leg (Fracture of the Tibia) Purpose Objectives Procedures Profile Tasks – their relationship to occupations and theory
9:30-10:30	*Hospital Observation* – Emergency Room, Admissions
10:30-10:45	Break
10:45-11:00	*Presentation* – Inservice Training Room C and D
	Actual Medical Record of a Broken Leg Case – Jerome Epstein
11:00-12:00	*"How to Teach a Task"* – Dr. Miles Anderson
12:00-1:00	Lunch

1:00-3:00 *Demonstration of Task Instruction* – Ken Daniel, First Aid Instructor, American Red Cross

Basic First Aid

Treatment for Shock
Splint Application
Sling for Broken Arm

Placing Patient on Guerney and Transporting (film will be shown)

Individual Instruction and Practice

Feedback Session

Wednesday, August 2, 1972

7:45 a.m. Pickup – front of Miramar Hotel

8:00-8:15 *Presentation* – Jerome Epstein

Actual medical record of a broken leg case (X-ray requested)

8:15-9:00 *Lecture* – Larry Erdman, R.T., Supervisory of Radiology, St. John's Hospital

Purpose of X-rays
Danger of overexposure to radiation
X-ray procedures

9:00-10:00 *Hospital Observation* – Radiology Department, Physical Therapy Department (Hydrotherapy)

10:00-10:30 *Lecture*

Sample of X-rays (good and bad)

10:30-12:00 *Demonstration of Task Instruction*

Loading a cassette
Measuring with a centimeter ruler

12:00-1:00 Lunch

1:00-3:00 *Demonstration of Task Instruction* – Joseph Rossi, R.P.T. Supervisor of P.T., Sharri Brient, R.P.T., St. John's Hospital

Walking on Crutches

Individual Instruction and Practice

Feedback Session

Thursday, August 3, 1972

7:45 a.m. Pickup – front of Miramar Hotel

8:00-8:10 *Discussion*

Resources for Task Instruction

Guest lecturers
School nurse/school doctor
Clinical site instruction
Classroom teacher
Audiovisuals

8:10-8:30 *Lecture* – Lucile Wood, Associate Director of Nursing, Allied Health Professions Project

Role of the Orderly
Role of the Aide
Role of the LVN
Role of the RN

Educational requirements

8:30-9:00 *Presentation* – Jerome Epstein

Actual medical record of a broken leg case

9:00-10:00 *Hospital Observation* – nursing floors

10:00-10:15 Break

10:15-12:00 *Demonstration of Task Instruction* – June Huddleson, RN, Hospital Occupations Program Director, Monroe High School, Granada Hills

Handwashing
Taking and recording vital signs

Temperature
Respiration
Pulse
Blood pressure

12:00-1:00 Lunch

1:00-2:00 *Individual Instruction and Practice*

2:00-3:00 *Wrap-up and Evaluation Session*

APPENDIX B

EXAMPLE OF A TASK LIST

University of California, Los Angeles
Division of Vocational Education
Allied Health Professions Projects
Secondary Schools Allied Health Program

PHASES II AND III, NURSING WORK EXPERIENCE TRAINING PROGRAM

Required Reference Manual: Wood, *Nursing Skills for Allied Health Service*, I and II, Philadelphia: W.B. Saunders Co., 1972 ($10.00)

INSTRUCTIONS TO STUDENT

Before undertaking any task in the hospital, the student must review the legal and ethical aspects related to the job of nurse, safety practices, and the basic guidelines governing nursing practices. Study of the following topics in *Nursing Skills for Allied Health Services* until all test questions can be answered correctly is required:

1. The Health Worker and the Law, Unit 1, p. 1-10
2. Introduction to Ethics in the Healing Arts, Unit 2, p. 11-26
3. Environment and the Patient, Unit 3, p. 27-40
4. Guidelines for Performance of Nursing Skills, Unit 4, p. 41-52
5. Body Alignment, Balance, and Movement for Health Workers, Units 5 and 6, p. 53-98
6. Introduction to Charting, Unit 7, p. 99-122

The following tasks are listed starting with those that are simple and easy to learn, becoming more difficult as you progress. However, in the work experience training program, it is not possible to follow this ideal arrangement, and you will often be called on to assist with or learn to do tasks that are more advanced before you complete all the simpler ones. This is normal in on-the-job training, as there is no way to predict in advance what tasks must be learned immediately, as they are being done constantly in connection with almost everything you do.

It is important for you to keep an accurate record of all the tasks you learn. It enables you and your supervisor to know what you have learned and what you still have to learn at any given time, and also serves as a valuable reference when seeking credit if you decide to go to college for further training, or when applying at the employment office for a job when you graduate from school.

When your supervisor or instructor is satisfied with your performance of a task, and you have correctly answered all the self-test questions about the task, have her sign and date the blank space by the task number. Patient care tasks must be performed with real patients

in the hospital or health-care facility. Simulated exercises in the nursing classroom are *not* acceptable. It is your responsibility to see that every task you learn is signed off in your record booklet. It is the *only* proof you will have of the work you have accomplished. Keep it with you at all times, and *do not lose it.*

The required instruction manuals, *Nursing Skills for Allied Health Services,* are a most essential part of your training program. Every task you see listed in your record book on the following pages is explained in detail, step by step, with illustrations, in the instruction manuals. The unit number shown for each task refers to a unit of instruction in the manuals. They can be quickly found by following the grey unit-number identification blocks printed on the right-hand edges of the pages in the manuals. The following instructions will help you get the most out of the materials, as you will be able to learn the "why" as well as the "how" of each task you do.

1. Study Units 1 through 7 at home and do your best to answer the self-test questions at the end of each unit. As with all of your work and study, if you read something that puzzles you, ask your supervisor to explain it to you.

2. All the tasks in your nursing course are explained and illustrated in your manuals, but never assume that because you have read the instructions in the manual, you are ready to perform the task. First, your supervisor or instructor will demonstrate how to perform it, step by step, explaining as she proceeds. Then she will have you try it, giving you help and correcting your errors if you start to make any, and will have you repeat the task until she is satisfied with your ability to perform it. The purpose of the instructions in the manual is to enable her to teach you more quickly and thoroughly, and thus save time for both of you. Here is how it works. If you find out in advance that your supervisor plans to let you start learning a new task the following day, or within a day or two, look up that task in your manual and read the instructions that explain how to do it and why. It is a good idea to read the entire unit. For example, Unit 17 deals with feeding the patient, and there are eight tasks in the unit. You can get a good overall understanding of patient nutrition by reading the entire unit, which is only 15 pages. Check on your understanding of the unit by writing the answers to the "Post-Test" without looking at the answers on the opposite page, then check your answers with the correct ones and see how well you did. On those you missed, look back in the unit and see where you slipped up. Now, when your supervisor demonstrates to you how to perform the task, you will be able to follow her steps and explanations much more quickly, and will have a better background understanding of the "whys" of the task from your reading about it in the manual. The manual is a teaching aid for your instructor, enabling her to help you learn more, in less time, and remember it better, but it is never a substitute for an instructor. It is when you actually do the task under her supervision that you really learn how to perform correctly.

3. If your supervisor cannot let you know in advance what task you will be taught next, follow her demonstration closely, and listen to every word of explanation, then when you undertake to do it under her supervision, do your best to remember every step and key point and perform to the best of your ability. Then later, when you have an opportunity to do so, look up the task in your manual and review it carefully to impress the steps and key points in your mind, and to become familiar with any new words you learned so you will be able to recognize them in print. Answer the test questions as explained above.

4. The key to rapid progress in nursing is the extent to which you are willing to ACCEPT RESPONSIBILITY. No one has to tell a professional nurse to regularly read the articles in the nursing journals to keep up to date. She does it as part of her professional responsibility to be able to give the best possible care to her patients. Start now to develop the habit of reading about nursing by reading your manuals without being told to do so, and at every opportunity, pick up copies of nursing magazines and journals and read them. The more you read, the better you will be at doing it, and it will become a skill that will be useful to you all your professional life.

A. Handwashing and Making Hospital Beds

_____ 1. Handwashing technique for medical asepsis (Unit 8)
_____ 2. Make an unoccupied bed (Unit 9)
_____ 3. Adjust a bed to various positions (Unit 9)
_____ 4. Prepare the bed and unit for the patient (Unit 9)
_____ 5. Make an anesthetic or surgical bed (Unit 9)
_____ 6. Make an occupied bed (Unit 9)

B. Giving the Patient Personal Care

_____ 7. Assist patient to dress and undress (Unit 10)
_____ 8. Give patient a partial bath (Unit 11)
_____ 9. Give patient cleansing bath (Unit 11)
_____ 10. Give patient a medicated bath (Unit 11)
_____ 11. Give patient a therapeutic bath (Unit 11)
_____ 12. Give patient a sitz bath (Unit 11)
_____ 13. Give patient a back rub (Unit 11)
_____ 14. Comb and brush patient's hair (Unit 12)
_____ 15. Shampoo patient's hair (Unit 12)
_____ 16. Give patient stretcher shampoo (Unit 12)
_____ 17. Care for an incontinent patient (Unit 13)
_____ 18. Give skin care for patient who is in one position for a long time (Unit 13)
_____ 19. Care for patient with colostomy or ileostomy appliances (Unit 13)
_____ 20. Care for patient's fingernails and toenails (Unit 13)

C. Helping the Patient Ambulate

_____ 21. Give patient passive range-of-motion exercises (Unit 14)
_____ 22. Assist patient to dangle legs (Unit 14)
_____ 23. Assist patient to walk (Unit 14)
_____ 24. Assist patient from bed to wheelchair (Unit 15)
_____ 25. Assist (with help) helpless patient from bed to wheelchair (Unit 15)
_____ 26. Assist patient to use walker (Unit 15)
_____ 27. Fit crutches to patient (Unit 15)
_____ 28. Assist patient to walk with crutches (3-point gait) (Unit 15)
_____ 29. Assist patient to walk with crutches (4-point gait) (Unit 15)
_____ 30. Assist patient to walk with crutches (2-point gait) (Unit 15)
_____ 31. Assist patient to put on back brace (Unit 15)
_____ 32. Assist patient to put on long leg brace (Unit 15)
_____ 33. Assist patient to put on short leg brace (Unit 15)
_____ 34. Assist in transferring patient from bed to wheelchair using Hoyer lift or similar device (Unit 15)
_____ 35. Assist patient to learn special skills for crutch walking (stairs, opening doors) (Unit 15)

D. Positioning the Patient in Bed

_____ 36. Place patient in supine position (Unit 16)
_____ 37. Place patient in lateral and Sims' position (Unit 16)
_____ 38. Place patient in prone position (Unit 16)
_____ 39. Place patient in Fowler's position (Unit 16)
_____ 40. Place patient in semi-Fowler's position (Unit 16)
_____ 41. Place patient in Trendelenburg's position (Unit 16)
_____ 42. Move patient toward head of bed (Unit 16)

E. Assisting the Patient With Meals

_____ 43. Prepare patient for meal (Unit 17)
_____ 44. Serve diet tray (Unit 17)
_____ 45. Feed an adult patient (Unit 17)
_____ 46. Feed a blind patient (Unit 17)
_____ 47. Remove diet tray and clean up area (Unit 17)
_____ 48. Feed infant (to 2 yrs age) (Unit 17)
_____ 49. Feed toddler (18-26 mos age) (Unit 17)
_____ 50. Feed preschool child (3-6 yrs) (Unit 17)

F. Measuring Patient Fluid Intake and Output

_____ 51. Measure urine output (Unit 18)
_____ 52. Observe and assist with intravenous therapy (Unit 19)
_____ 53. Assist with spiritual care (Unit 20)

G. Helping the Patient With Urine Elimination

_____ 54. Assist the patient to use the bedpan (Unit 21)
_____ 55. Assist the patient to use the female urinal (Unit 21)
_____ 56. Assist the patient to use the fracture pan (Unit 21)
_____ 57. Assist the patient to use the male urinal (Unit 21)
_____ 58. Assist the patient to use the male urinal (Unit 21)

H. Collecting Urine Specimens for Diagnostic Tests

_____ 59. Collect routine urine specimen (Unit 21)
_____ 60. Collect midstream or clean-catch urine specimen (Unit 21)
_____ 61. Do a 24-hour urine collection (Unit 21)
_____ 62. Do a timed urine collection (Unit 21)

I. Doing Common Tests for Sugar and Acetone in Urine

_____ 63. Do a Clinitest urine test for sugar (Unit 21)
_____ 64. Do a Tes-Tape urine test for sugar (Unit 21)
_____ 65. Do an Acetest urine test for acetone (Unit 21)
_____ 66. Do a Ketostix urine test for acetone (Unit 21)
_____ 67. Do a Keto-Diastix test for sugar and acetone (Unit 21)
_____ 68. Collect urine from a Foley catheter (Unit 21)

J. Assisting Patient With Bowel Elimination

_____ 69. Remove fecal impaction (Unit 22)
_____ 70. Insert rectal suppository (Unit 22)
_____ 71. Collect a stool specimen (Unit 22)
_____ 72. Give patient a cleansing enema (Unit 22)
_____ 73. Give patient a retention enema (Unit 22)
_____ 74. Give patient a Harris flush (Unit 22)
_____ 75. Irrigate a colostomy (Unit 22)

K. Collection of Sputum and Gastric Specimens

_____ 76. Collect a sputum specimen (Unit 23)
_____ 77. Care for a vomiting patient (Unit 23)
_____ 78. Collect a gastric content specimen (Unit 23)

L. Perineal Care, Care of Patient With Gastrointestinal Tubes

_____ 79. Give perineal care for female patient (Unit 24)
_____ 80. Give perineal care for male patient (Unit 24)
_____ 81. Assist in insertion of gastric tube for drainage purposes (Unit 25)
_____ 82. Assist in insertion of intestinal tubes for drainage purposes (Unit 25)
_____ 83. Assist in insertion of tube for gastric analysis (Unit 25)
_____ 84. Assist in gastric gavage feeding of patient (Unit 25)
_____ 85. Assist in gastrostomy feeding of patient (Unit 25)
_____ 86. Assist in enterostomy feeding of patient (Unit 25)
_____ 87. Assist in proctoclysis or feeding through colon (Unit 25)
_____ 88. Empty and measure the contents of drainage bottles (Unit 25)

M. Measuring Temperature, Pulse, Respiration, Blood Pressure

_____ 89. Measure patient's temperature with oral thermometer (Unit 26)
_____ 90. Measure patient's temperature with rectal thermometer (Unit 26)
_____ 91. Measure patient's temperature by the axillary method (Unit 26)
_____ 92. Measure the patient's pulse, radial (Unit 26)
_____ 93. Measure patient's pulse, temporal (Unit 26)
_____ 94. Measure patient's pulse, femoral (Unit 26)

_____ 95. Measure patient's apical pulse rate (Unit 26)
_____ 96. Measure patient's respiration rate (Unit 26)
_____ 97. Measure patient's blood pressure (Unit 26)

N. Admitting, Transferring, and Discharging Patients

_____ 98. Prepare patient's room for new admittance (Unit 27)
_____ 99. Admit patient to his room (Unit 27)
_____ 100. Transfer patient from one bed or room to another (Unit 27)
_____ 101. Discharge patient (Unit 27)
_____ 102. Care for dying patient (Unit 28)
_____ 103. Give postmortem care for patient (Unit 28)

O. Care of Patients Receiving Oxygen Therapy

_____ 104. Give patient oxygen by nasal catheter (Unit 29)
_____ 105. Give patient oxygen by face mask (Unit 29)
_____ 106. Give patient oxygen by tent (Unit 29)
_____ 107. Care for patient receiving oxygen by Intermittent Positive Pressure (IPPB) (Unit 29)
_____ 108. Give nursing care for patient receiving oxygen (Unit 29)

P. Cardiopulmonary Resuscitation

_____ 109. Give mouth-to-mouth resuscitation (Unit 30)
_____ 110. Give cardiac compression (Unit 30)

Q. Assisting With Hot and Cold Applications

_____ 111. Apply hot water bottle to patient (Unit 31)
_____ 112. Apply disposable hot pack to patient (Unit 31)
_____ 113. Apply ice bag or ice collar to patient (Unit 31)
_____ 114. Apply disposable cold pack to patient (Unit 31)
_____ 115. Apply electric heating pad to patient (Unit 31)
_____ 116. Apply heat cradle to patient (Unit 31)
_____ 117. Give patient hypothermia treatment (Unit 31)
_____ 118. Apply aquathermia pad (hypothermia/hyperthermia) to patient for local treatment (Unit 31)

R. Operating Patient Turning Frames

_____ 119. Set up and transfer patient to Stryker frame (Unit 31)
_____ 120. Help patient with bedpan on Stryker frame (Unit 31)
_____ 121. Set up and transfer patient to Circ-O-Lectric bed (Unit 31)
_____ 122. Turn the patient to a prone position on a Circ-O-Lectric bed (Unit 31)
_____ 123. Help patient with bedpan on a Circ-O-Lectric bed (Unit 31)
_____ 124. Adjust positions of the Circ-O-Lectric bed (Unit 31)

S. Applying Patient Restraints

_____ 125. Apply a limb-holder or wrist-type restraint to patient (Unit 31)
_____ 126. Apply a jacket restraint to patient (Unit 31)
_____ 127. Apply an elbow restraint on an infant (Unit 31)
_____ 128. Apply a safety belt or restraint strap to patient (Unit 31)

T. Applying Bandages and Binders

_____ 129. Apply a circular bandage to patient's limb (Unit 32)
_____ 130. Apply a figure-8 bandage to patient's limb (Unit 32)
_____ 131. Apply an Ace (elastic) spiral bandage to patient's limb (Unit 32)
_____ 132. Apply a spiral reverse bandage to patient's limb (Unit 32)
_____ 133. Apply a recurrent bandage to amputee's stump (Unit 32)
_____ 134. Apply a Scultetus binder to patient's abdomen (Unit 32)
_____ 135. Apply a straight binder to patient's abdomen or chest (Unit 32)
_____ 136. Apply a T-Binder or Double T-Binder to patient's perineal area (Unit 32)
_____ 137. Apply a sling (triangular) bandage to support patient's arm (Unit 32)

U. Preoperative Care of Patient

_____ 138. Give patient day-before-surgery care (Unit 33)
_____ 139. Give patient day-of-surgery care (Unit 33)
_____ 140. Obtain consents and releases (Unit 34)
_____ 141. Make an incident report (Unit 34)

V. Postoperative Care of Patient

_____ 142. Prepare the postoperative unit (Unit 35)
_____ 143. Assist patient to maintain respiratory function (Unit 35)
_____ 144. Check patient's operative site (Unit 35)
_____ 145. Provide for patient's comfort, needs, and safety (Unit 35)
_____ 146. Treat patient for shock and complications (Unit 35)

W. Isolation Technique

_____ 147. Set up an isolation unit (Unit 36)
_____ 148. Put on an isolation face mask (Unit 36)
_____ 149. Put on an isolation gown (Unit 36)
_____ 150. Remove an isolation gown (Unit 36)
_____ 151. Put on sterile or nonsterile single-use gloves (Unit 36)
_____ 152. Remove sterile or nonsterile single-use gloves (Unit 36)
_____ 153. Serve diet tray to patient in isolation (Unit 36)
_____ 154. Remove diet tray from patient in isolation (Unit 36)
_____ 155. Help patient in isolation with bedpan and urinal (Unit 36)

_____ 156. Collect specimens from patient in isolation (Unit 36)
_____ 157. Dispose of waste materials from isolation unit: double-bag technique (Unit 36)
_____ 158. Remove linens from isolation unit (Unit 36)
_____ 159. Take TPR and BP in isolation unit (Unit 36)
_____ 160. Transport patient out of isolation unit (Unit 36)
_____ 161. Transfer isolation patient to another hospital or unit (Unit 36)
_____ 162. Perform terminal disinfection of isolation unit (Unit 36)

Tasks Learned Not Included in List

_____ 163.
_____ 164.
_____ 165.
_____ 166.
_____ 167.
_____ 168.
_____ 169.
_____ 170.

APPENDIX C

AN EVALUATION FORM USED BY STUDENTS*

*With appropriate modifications, this form was also used by parents of participants.

SECONDARY SCHOOLS PROJECT, AHPP

Students' Evaluative Opinions

Directions to students:

In the left-hand column below are questions about what you have learned in the Secondary Schools Project this year. In the right-hand column are spaces for you to check your answers. Please place a check mark (✓) in the space that best describes the amount of progress that you think you have made.

This is not a test. There are no right or wrong answers. Do not sign your name.

Questions	My Opinion About My Progress This Year (Check only one answer for each question)
1. How much progress have you made in developing your ability to tell what workers do in several allied health occupations?	_____ None _____ Little _____ Quite a bit _____ Much _____ Don't know
2. How much progress have you made in developing your ability to explain steps necessary to enter an allied health job, including the training and educational background needed?	_____ None _____ Little _____ Quite a bit _____ Much _____ Don't know

3. How much progress have you made in developing your ability to make a wise vocational choice?

_____ None
_____ Little
_____ Quite a bit
_____ Much
_____ Don't know

4. How much progress have you made in developing your ability to demonstrate knowledge of how health-care facilities operate?

_____ None
_____ Little
_____ Quite a bit
_____ Much
_____ Don't know

5. How much progress have you made in developing your ability to perform basic skills in selected allied health occupations?

_____ None
_____ Little
_____ Quite a bit
_____ Much
_____ Don't know

6. How much knowledge have you gained about how health-care facilities operate?

_____ None
_____ Little
_____ Quite a bit
_____ Much
_____ Don't know

7. How much progress have you made in your ability to identify and describe the functions of specific equipment used in the health-care system?

_____ None
_____ Little
_____ Quite a bit
_____ Much
_____ Don't know

8. How much have you improved your behavior appropriate to the world of work (dependability, attendance, personal appearance, etc.)?

_____ None
_____ Little
_____ Quite a bit
_____ Much
_____ Don't know

9. How much have you gained in your ability to maintain your own health through the use of appropriate health care?

_____ None
_____ Little
_____ Quite a bit
_____ Much
_____ Don't know

10. How much have you gained in your ability to refer your family and friends to appropriate health-care facilities?

_____ None
_____ Little
_____ Quite a bit
_____ Much
_____ Don't know

APPENDIX D

A STUDENT EVALUATION FORM USED BY HOSPITAL SUPERVISORS

PERFORMANCE APPRAISAL

Name: Hospital: Department:

School: Date of Work:

INSTRUCTIONS: This form should be used to evaluate employee performance. It should be reviewed with the employee. Place a check in the space which best expresses your judgment.

1.	QUALITY OF WORK	Unsatisfactory ( )	Satisfactory ( )	Above Average ( )
2.	QUANTITY OF WORK	Substandard ( )	Average ( )	High ( )
3.	POTENTIAL	Doubtful ( )	Promising ( )	Above Average ( )
4.	ATTITUDE	Indifferent ( )	Normal Interest ( )	Enthusiastic ( )
5.	COOPERATION WITH OTHERS	Antagonistic ( )	Satisfactory ( )	Supportive ( )
6.	JOB SKILL	Low ( )	Adequate ( )	Good ( )
7.	INITIATIVE	Needs Prodding ( )	Does Assigned Work Well ( )	Seeks Tasks To Be Done ( )
8.	ATTENDANCE	Unsatisfactory ( )	Satisfactory ( )	Number of Days Present ( )
9.	APPEARANCE	Must Improve ( )	Satisfactory ( )	Outstanding ( )

COMMENTS: _____

_____

Signature of immediate supervisor _____ Date _____

Signature of employee rated _____ Date _____

APPENDIX E

PARTICIPATING HEALTH-CARE FACILITIES AND PERSONNEL

PARTICIPATING HEALTH-CARE FACILITIES AND PERSONNEL IN SECONDARY SCHOOLS PROJECT

1. *Lincoln High School*
   Peter Martinez, Principal
   Laurence Arellanes, Head Counselor
   May Kishiyama, Teacher
   Marilyn Morgan, Jeff Reyes, Larry Hagman, Field Coordinators

   Cedars-Sinai Medical Center
   Paul Rubenstein, Director of Professional Services
   Jan Costa, Training Director
   Leonard Swartzman, Director of Medical Education

   USC Medical Center
   Leslie Smith, Hospital Administrator
   Marshall Celestin, Head Training Officer
   Edgar Aquilar, Assistant Training Officer

2. *Jordan High School*
   Lionel Joubert, Leon Jordon, Principals
   John DeBoise, Head Counselor
   Elaine Hadden, Teacher
   Gregory Threadgill, Field Coordinator

   Harbor General Hospital
   Les Smith, Assistant Administrator
   Joe Williams, Training Director

3. *Fremont High School*
   Donald Bolton, Principal
   Richard Brown[illegible] Ann Barrington, Vice Principals
   Phyllis Smith, Head Counselor
   Maude Peronneau, Eva Manson, Teachers
   Gregory Threadgill, Field Coordinator

   St. Francis Hospital
   Ralph Miller, Training Director

   Kaiser Permanente -- Harbor City
   Don Martine, Training Director
   Ed Bunting, Clinic Administrator

   Martin Luther King, Jr. Hospital
   Harry Douglas, Personnel Director
   Tom Hawkins, Training Director

4. *Long Beach Polytechnic High School*
Jack DeBose, Principal
Don Menke, Head Counselor
Marcelin Fortain, Teacher
William Hudson, Field Coordinator

St. Mary's Hospital
Anthony Abbot, Vice President, Personnel
Beverly Bohaty, Personnel Director
Naomi Tanikawa, Director of Education